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UNITED STATES INTERNATIONAL TRADE COMMISSION

Washington, D.C.

In the Matter of **CERTAIN VIDEO CAPABLE ELECTRONIC DEVICES, INCLUDING COMPUTERS, STREAMING DEVICES, TELEVISIONS, CAMERAS, AND COMPONENTS AND MODULES THEREOF**	**Inv. No. 337-TA-1379**

INITIAL DETERMINATION ON VIOLATION OF SECTION 337 AND RECOMMENDED DETERMINATION ON REMEDY AND BOND

Administrative Law Judge Doris Johnson Hines

(January 29, 2025)

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Table of Contents

I. Introduction 1

A. Procedural History 1

B. The Private Parties 3

1. Nokia 3

2. Amazon 3

C. The Asserted Patents and Claims 4

1. U.S. Patent No. 7,532,808 4

2. U.S. Patent No. 8,204,134 8

D. The Accused Products 10

E. The Domestic Industry Products 10

1. Microsoft Domestic Industry Products 10

2. Samsung Domestic Industry Products 11

II. Statutory Authority 11

A. Quorum 11

B. U.S. Constitution, Article II 12

C. U.S. Constitution, Article III and Seventh Amendment Jury Trial Right 13

III. Ownership Rights in the Asserted Patents 15

IV. Importation 15

V. Level of Ordinary Skill in the Art 16

VI. The '808 Patent 17

A. Claim Construction 17

B. Infringement and Technical Domestic Industry 19

1. Legal Standards 19

a) Infringement 19

b) Technical Domestic Industry 21

2. Disputed Issues 22

3. Decoding Claims 23

a) Claims 7 and 16 23

(1) Element 7[pre] and Element 16[pre] 23

(2) Element 7[a] and Element 16[a] 23

Nokia Exhibit 2013, p. 2
Snap/Hisense v. Nokia
IPR2025-01440

(a) Construction of "Image Segments Surrounding the Macroblock in Question" 24
(b) Infringement and Technical Domestic Industry 31
(3) Element 7[b] and Element 16[b] 34
(4) Element 7[c] and Element 16[c] 35
b) Claim 22 35
c) Claim 40 36
4. Encoding Claims 37
a) Claims 1 and 10 37
(1) Element 1[pre] and Element 10[pre] 37
(2) Element 1[a] and Element 10[a] 37
(3) Element 1[b] and Element 10[b] 38
(4) Element 1[c] and Element 10[c] 39
(5) Element 1[d] and Element 10[d] 45
b) Claim 21 46
c) Claims 29 and 48 47
5. Indirect Infringement 48
C. Validity 48
1. Legal Standard 49
2. MPEG-1 51
a) Anticipation 52
b) Obviousness 53
3. JVT-F100 59
4. Secondary Considerations 62
VII. The '134 Patent 64
A. Claim Construction 64
B. Infringement and Technical Domestic Industry 64
1. Domestic Industry Source Code 65
2. Claim 9 66
a) Element 9[b] 66
b) Element 9[c] 70
3. Dependent Claims 71

Nokia Exhibit 2013, p. 3
Snap/Hisense v. Nokia
IPR2025-01440

4. Indirect Infringement 71
C. Validity 71
1. Combination of TML-9 and H.262 71
a) Element 9[b] 72
b) Element 9[c] 75
c) Dependent Claims 77
2. Secondary Considerations 77
VIII. Economic Prong 77
A. Articles Protected by the Patents 78
B. Realities of the Marketplace 80
1. Separate Entity or Article of Commerce 81
2. Essential Component 83
3. Direct Relationship to Exploitation of the Patented Technology 84
C. Microsoft's Domestic Activities 88
1. Overview of Microsoft's Domestic Activities 88
2. Microsoft's Domestic Expenditures 90
a) Plant and Equipment 90
b) Labor or Capital 90
3. Significance Analysis 90
D. Samsung's Domestic Activities 93
1. Overview of Samsung's Domestic Activities 93
2. Samsung's Domestic Expenditures 95
a) Plant and Equipment 95
b) Labor or Capital 95
3. Significance Analysis 96
E. Amazon's Additional Arguments 98
1. Improper Timeframe 98
2. Pre-launch Activities 99
3. Alleged Noncognizable Investments 99
F. Economic Domestic Industry as to Microsoft Xbox Products 101
IX. Other Defenses 102
A. Breach of RAND Obligations 102

Nokia Exhibit 2013, p. 4
Snap/Hisense v. Nokia
IPR2025-01440

B. Breach of Duty to Negotiate in Good Faith 106
C. Implied Waiver and Equitable Estoppel 109
D. Waiver of Right to Exclusionary Relief 112
E. Laches 113
F. Patent Misuse and Unclean Hands 115
X. Conclusions of Law 117
XI. Public Interest 117
A. Public Health and Welfare 119
B. Competitive Conditions in the United States Economy 121
C. Production of Like or Directly Competitive Articles in the United States 122
D. United States Consumers 123
E. Standard Essential Patents 124
XII. Recommended Determination on Remedy and Bond 124
A. Limited Exclusion Order 125
B. Cease and Desist Order 126
C. Bond During Presidential Review 128
XIII. Initial Determination on Violation 129
XIV. Order 130

Nokia Exhibit 2013, p. 5
Snap/Hisense v. Nokia
IPR2025-01440

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This is the final initial determination in *Certain Video Capable Electronic Devices, Including Computers, Streaming Devices, Televisions, Cameras, and Components and Modules Thereof*, United States International Trade Commission Investigation No. 337-TA-1379. Notice of Investigation, 88 Fed. Reg. 84832 (Dec. 6, 2023) (EDIS Doc. ID 810224).

I. INTRODUCTION

A. Procedural History

Nokia Technologies Oy and Nokia Corporation filed a complaint alleging violations of section 337 based on the importation into the United States, the sale for importation, and the sale within the United States after importation of certain video capable electronic devices, including computers, streaming devices, televisions, cameras, and components and modules thereof. *See* Notice of Investigation.

The Commission instituted this investigation to determine:

> [W]hether there is a violation of subsection (a)(1)(B) of section 337 in the importation into the United States, the sale for importation, or the sale within the United States after importation of certain products identified in paragraph (2) by reason of infringement of one or more of claims 1–3, 6, 7, 9–12, 15–17, 20–25, 28–30, 32–34, 36, 39–41, 43, 44, 47–49, 51–54, 58–60, and 62–65 of [U.S. Patent No. 7,532,808], and claims 1–22 of [U.S. Patent No. 8,204,134], and whether an industry in the United States exists as required by subsection (a)(2) of section 337.

Notice of Investigation.

The plain language description of the accused products defines the scope of the investigation. 19 C.F.R. § 210.10(b)(1). The products are described as "laptop computers, desktop computers, tablet computers, streaming devices, televisions, cameras, and components and modules thereof." Notice of Investigation.

Nokia Exhibit 2013, p. 6
Snap/Hisense v. Nokia
IPR2025-01440

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Amazon.com, Inc., Amazon.com Services, LLC, and HP Inc. were named as respondents. *Id.* The Office of Unfair Import Investigations is also a party. *Id.*

The target date for this investigation was originally set at sixteen months, which was extended to May 29,2025, making this final initial determination due no later than January 29, 2025. Order No. 62 (EDIS Doc. ID 838803), *unreviewed by* Comm'n Notice (EDIS Doc. ID 840560) and Order No. 63 (EDIS Doc. ID 840864), *unreviewed by* Comm'n Notice (EDIS Doc. ID 841885).

Nokia's complaint asserted infringement of 66 claims across the two asserted patents. Complaint (EDIS Doc. ID 807342). Nokia moved several times to terminate its complaint as to various claims, which motions were granted. Order No. 20 (EDIS Doc. ID 813182), *unreviewed by* Comm'n Notice (EDIS Doc. ID 814203), Order No. 44 (EDIS Doc. ID 823519), *unreviewed by* Comm'n Notice (EDIS Doc. ID 825113), and Order No. 52 (EDIS Doc. ID 825558), *unreviewed by* Comm'n Notice (EDIS Doc. ID 828353). The following claims are currently asserted:

- claims 1, 7, 10, 16, 21, 22, 29, 40, and 48 of the '808 patent; and
- claims 9, 11, and 13–15 of the '134 patent.

A claim construction hearing was held after which a claim construction order was issued. Corrected Order No. 38 (EDIS Doc. ID 826408).

Nokia and HP moved to terminate the investigation as to HP based on settlement, which motion was granted. Order No. 61 (EDIS Doc. ID 838594), *unreviewed by* Comm'n Notice (EDIS Doc. ID 840492). In view of this termination, issues specifically relating to HP are not addressed.

Amazon filed a stipulation regarding importation and inventory of the accused products. Amazon Stipulation. JX-0007C (EDIS Doc. ID 818554).

Nokia Exhibit 2013, p. 7
Snap/Hisense v. Nokia
IPR2025-01440

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I held a prehearing conference and an evidentiary hearing. *See* Tr. at 1-1978.[1] The parties filed post-hearing briefs, Nokia Br. (EDIS Doc. ID 830252 (corrected brief)); Amazon Br. (EDIS Doc. ID 830467); Staff Br. (EDIS Doc. ID 831854); Nokia Reply (EDIS Doc. ID 831343); Amazon Reply (EDIS Doc. ID 831371); and Staff Reply (EDIS Doc. ID 831888).

Nokia filed an unopposed motion to reopen the record and admit two exhibits, CX-4912C and CX-5707C, which were addressed at the evidentiary hearing. Motion Docket No. 1379-053 (EDIS Doc. ID 840579). Nokia states that its "vendor inadvertently provided the incorrect native spreadsheets" for these exhibits. Mot. at 3. There being no opposition and for good cause shown, Motion No. 1379-053 is GRANTED.

B. The Private Parties

1. Nokia

Complainants Nokia Technologies Oy and Nokia Corporation are Finnish corporations, located in Espoo, Finland. Compl. at ¶ 10 and 13. Nokia Tech is a wholly owned subsidiary of Nokia Corp. *Id.* at ¶ 11. Nokia Tech is the owner by assignment of all right, title and interest in the asserted patents. JX-0005 ('808 patent assignment documents) and JX-0006 ('134 patent assignment documents).

2. Amazon

Respondent Amazon.com, Inc. is a Delaware Corporation with a place of business in Seattle, Washington. Amazon Response to Complaint at ¶ 33 (EDIS Doc. ID 811784).

[1] The public transcript of the evidentiary hearing is available as EDIS Doc. IDs 827089 (day 1), 827238 (day 2), 827393 (day 3), 827634 (day 4), 827706 (day 5), and 827985 (day 6). The confidential transcript of the evidentiary hearing is on EDIS as Doc. IDs 827088 (day 1), 827237 (day 2), 827392 (day 3), 827631 (day 4), 827705 (day 5), and 827984 (day 6). These transcripts are hereinafter collectively referred to as Tr.

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Amazon.com Services, LLC is a wholly owned subsidiary of Amazon.com and is a Delaware Limited Liability Company with a place of business in Seattle, Washington. *Id.* at ¶¶ 38–39. Amazon states that it has imported and sold within the United States after importation the products accused of infringement in this investigation. Amazon Joint Stipulation at ¶ 3.

C. The Asserted Patents and Claims

Nokia asserts claims from two patents in this investigation: the '808 and '134 patents.

1. U.S. Patent No. 7,532,808

The '808 patent is titled "Method for Coding Motion in a Video Sequence" and relates generally to motion compensation in video coding. The patent explains that in a typical video coding system, motion compensated prediction is performed on a macro-block basis. '808 patent (JX-0003) at 10:23–25.[2] The patent refers to "Joint Model Number 1" (JM-1) of the Joint Video Team (JVT) of ISO/IEC MPEG (Motion Picture Expert Group) and ITU-T VCEG (Video Coding Experts Group), which assigned a coding mode depending on the characteristics of the macroblock and the motion in a video sequence. *Id.* at 10:27–50. There were eight such coding modes, with the eighth known as skip mode, which indicated that the macroblock was to be copied from the reference video frame without using motion compensated prediction. *Id.* at 10:50–67.

The '808 patent recognizes a problem with an assumption made by JM-1 of JVT that skip mode is statistically the most likely coding mode for a macroblock. If the video sequence contains global motion, panning or zooming, etc., skip mode is not used, causing degradation of compression efficiency. *Id.* at 12:18–47. Though solutions to this problem were proposed, the

[2] The Leahy-Smith America Invents Act (AIA), Pub. L. No. 112-29, 125 Stat. 284 (2011), amended 35 U.S.C. § 102 and § 103, effective March 16, 2013. Because the filing date of the '808 patent predates the AIA's amendments to § 102 and § 103, the pre-AIA versions of §§ 102 and 103 apply.

[redacted]

specification states that "it should be appreciated that there exists a significant unresolved technical problem relating to the coding of a digital video sequence in the presence of global motion, such as translation, panning or zooming of the camera." *Id.* at 13:45–49. To address these problems, "the present invention is based on a redefinition of the skip mode concept used in JM1 of the JVT codec." *Id.* at 14:16–18. In particular, "[a]ccording to the invention, the skip mode concept is redefined in such a way that a macroblock assigned to skip mode is either associated with a zero (non-active) motion vector, in which case it is treated in the same way as a conventional skip mode macroblock and copied directly from the reference frame, or it is associated with a non-zero (active) motion vector." *Id.* at 14:23–29.

Nokia asserts claims 1, 7, 10, 16, 21, 22, 29, 40, and 48, which recite:

> 1. [pre] A method of encoding a video sequence, the method comprising:
>
> [a] assigning a skip coding mode to a first segment of a first frame of the sequence;
>
> [b] assigning either a zero motion vector or a predicted non-zero motion vector for the skip coding mode for the first segment based at least in part on the motion information of a second segment neighboring the first segment; and
>
> [c] forming a prediction for the first segment with respect to a reference frame based at least in part on the assigned motion vector for the skip coding mode, wherein the assigned motion vector is one of the zero motion vector and the predicted non-zero motion vector; and
>
> [d] providing in an encoded bitstream an indication of the skip coding mode, wherein no further motion vector information for the first segment is coded in the encoded bitstream.
>
> 7. [pre] A method of decoding an encoded video sequence, the method comprising:
>
> [a] receiving an indication of a skip coding mode for a first segment;
>
> [b] assigning either a zero motion vector or a predicted non-zero motion vector for the skip coding mode for the first segment based at least in part

[redacted]

on the motion information of a second segment neighboring the first segment; and

[c] forming a prediction for the first segment with respect to a reference frame based at least in part on the assigned motion vector for the skip coding mode, wherein the assigned motion vector is one of the zero motion vector and the predicted non-zero motion vector.

10. [pre] A video encoder for encoding a video sequence, the encoder comprises:

[a] a coding controller for assigning a skip coding mode to a first segment;

[b, c] a motion estimation block for

[b] assigning either a zero motion vector or a predicted non-zero motion vector for the skip coding mode for the first segment based at least in part on the motion information of a second segment neighboring the first segment; and

[c] forming a prediction for the first segment with respect to a reference frame based at least in part on the assigned motion vector for the skip coding mode, wherein the assigned motion vector is one of the zero motion vector and the predicted non-zero motion vector; and

[d] a multiplexer for providing in an encoded bitstream an indication of the skip coding mode, wherein no further motion vector information for the first segment is coded in the encoded bitstream.

16. [pre] A video decoder for decoding an encoded video sequence, the decoder comprising:

[a] a demultiplexer for receiving an indication of a skip coding mode assigned to a first segment;

[b, c] a motion compensated prediction block for

[b] assigning either a zero motion vector or a predicted non-zero motion vector for the skip coding mode for the first segment based at least in part on the motion information of a second segment neighboring the first segment; and

[c] forming a prediction for the first segment with respect to a reference frame based at least in part on the assigned motion vector for the skip coding mode, wherein the assigned motion vector is one of the zero motion vector and the predicted non-zero motion vector.

[redacted]

> 21. A multimedia terminal, comprising an encoder according to claim 10.
>
> 22. A multimedia terminal comprising a decoder according to claim 16.
>
> 29. A method according to claim 1, further comprising:
>
> deriving the predicted non-zero motion vector based at least in part on the motion vector of the second segment and motion vector of a third segment neighboring the first segment.
>
> 40. A method according to claim 7, further comprising:
>
> deriving the predicted non-zero motion vector based at least in part on the motion vector of the second segment and motion vector of a third segment neighboring the first segment.
>
> 48. An encoder according to claim 10, wherein the motion estimation block further arranged to derive the predicted non-zero motion vector based at least in part on the motion vector of the second segment and motion vector of a third segment neighboring the first segment.

Nokia Br. at 2 and '808 patent at claims 1, 7, 10, 16, 21, 22, 29, 40, and 48.

Nokia contends that claims 7, 16, 22, and 40 are essential to the H.264 standard and that claims 1, 10, 21, 29, and 48 are not. Nokia Revised Identification at 1 (EDIS Doc. ID 813510) and H.264 standard, CX-0024. The H.264 standard refers to the ITU-T recommendation published as "H.264: Advanced Video Coding for Generic Audiovisual Services." Amazon recognizes that the term "essential" means "required to implement" the H.264 standard. Respondents' Identification at 1 (EDIS Doc. ID 813140). The H.264 standard defines "decoding process" as "[t]he process specified in this Recommendation | International Standard that reads a *bitstream* and derives decoded pictures from it" and defines "encoding process" as "[a] process, not specified in this Recommendation | International Standard, that produces a *bitstream* conforming to this Recommendation | International Standard." H.264 standard at .0023 at 3.41 and 3.47, respectively. (emphasis in original).

[redacted]

Amazon contends that no claims of the '808 patent are essential to the H.264 standard because the standard does not use a "surrounding" approach and instead uses a "block-by-block" approach "akin to the process developed by MPEG-1." Amazon Reply at 22 and *see* Respondents' Identification at 2. This issue relates to the parties' claim construction dispute on "surrounding," which is addressed below.

2. U.S. Patent No. 8,204,134

The '134 patent is titled "Grouping of Image Frames in Video Coding" and relates generally to the grouping of multimedia files, and particularly video files and in connection with streaming. The patent states that the "invention relates to the grouping of multimedia files, particularly video files and particularly in connection with streaming." '134 patent (JX-0004) at 1:13–15.[3] The patent explains that video files in multimedia files comprise a great number of still image frames, which are displayed rapidly in succession to create an impression of a moving image. The information comprised by consecutively displayed image frames is typically largely similar, resulting in a considerable amount of redundancy. '134 patent at 1:55–65. To reduce the amount of data in video files, the image data can be compressed into a smaller form by reducing the amount of redundant information in the image frames. In addition, while encoding, most of the currently used video encoders downgrade image quality in image frame sections that are less important in the video information. '134 patent at 2:5–10.

The patent describes one problem with a common procedure called reference picture selection in video coding: "the adjusting of scalability or coding method in the streaming server or a network element becomes difficult, because the video sequence must be decoded, parsed and

[3] Because the filing date of the '134 patent predates the AIA's amendments to § 102 and § 103, the pre-AIA versions of §§ 102 and 103 apply. *See* n.2.

[redacted]

buffered for a long period of time to allow any dependencies between different image groups to be detected." *Id.* at 3:37–61. Another problem relates to "the insertion of a video sequence in the middle of another video sequence, which has typically led to discontinuity in image numbering." *Id.* at 3:62–64. In this situation, the receiving terminal "may interpret the deviating image numbering as a signal of lost image frames and start unnecessary actions to reconstruct the image frames suspected as lost or to request a re-transmission." *Id.* at 4:4–7.

The patent explains that the invention overcomes these problems and is an "improved method and equipment implementing the method, which enable the decoder to take into account the image frames the encoder has intentionally removed." *Id.* at 4:21–28.

Nokia asserts claims 9, 11, and 13–15, which recite:

> 9. [a] A video decoder for decoding a compressed video sequence, the video decoder being connected to a buffer memory wherein image frames are entered in connection with the decoding, the video decoder being configured to
>
> [b] decode from the compressed video sequence an indication informing an intentional discontinuity of numbering the image frames;
>
> [c] configure, in response to the indication, the buffer memory to provide a number of image frames corresponding to at least one discontinuity in the numbering of the image frames; and
>
> [d] use the image frames in the buffer memory in the decoding process.
>
> 11. A video decoder according to claim 9, wherein the number of image frames in the buffer memory are used in sliding window buffering of image frames.
>
> 13. A video decoder according to claim 9, wherein the video decoder is further configured to enter into the buffer memory a number of filler frames corresponding to the at least one discontinuity in the numbering of the image frames.
>
> 14. A video decoder according to claim 13, wherein said filler frames are designated by an identifier indicating that the filler frames do not belong to the compressed video sequence.

[redacted]

15. A video decoder according to claim 9, wherein the video decoder is further configured to configure the buffer memory to provide a number of image frames corresponding to the at least one discontinuity in the numbering of the image frames by memory indications, whereby no data is entered into the buffer memory.

Nokia Br. at 1 and '134 patent at claims 9, 11, and 13–15.

Nokia contends that claims 9, 11, 13, and 14 are essential to the H.264 standard and that claim 15 is not. Nokia Revised Identification 1. Amazon contends that the asserted claims do not cover the H.264 standard. Amazon Reply at 31–48. This issue is addressed below.

D. The Accused Products

Asserted claims 1, 10, 21, 29, and 48 of the '808 patent are directed to video encoders and methods of encoding. The '808 patent encoder claim accused products are the Amazon Fire tablets and Amazon cameras (Ring and Blink). Asserted claims 7, 16, 22, and 40 of the '808 patent are directed to video decoders and methods of decoding. The '808 patent decoder claim accused products are the Amazon Fire tablets, Amazon Smart TVs (Fire TV and Fire TV cubes), and Amazon streaming devices. Orchard Tr. at 471:10–19 and CDX-0004C.46. The '314 patent asserted claims are directed to video decoders. The '314 patent accused products are the same as those accused with respect to the '808 patent decoder claims. Kia Tr. at 614:1–8 and 615:9–618:21 and CDX-0005C.28.

E. The Domestic Industry Products

1. Microsoft Domestic Industry Products

Nokia identifies Microsoft domestic industry products as its Xbox and Surface products. Nokia Br. at 6–8; Amazon Br. at 9; and Staff Br. at 7. Nokia contends that "[e]ach Microsoft DI Product includes at least one H.264 decoder that decodes H.264-compliant bitstreams and includes at least one encoder for encoding video into H.264-compliant formats." Nokia Br. at 6.

[redacted]

2. Samsung Domestic Industry Products

Nokia identifies Samsung domestic industry products as its Galaxy smartphones. Nokia Br. at 8–9; Amazon Br. at 9; and Staff Br. at 7. Nokia contends that "[e]ach Samsung DI Product includes at least one H.264 decoder that decodes H.264-compliant bitstreams and at least one encoder for encoding video into H.264-compliant formats." Nokia Br. at 8.

II. STATUTORY AUTHORITY

Congress has directed that "[t]he Commission shall investigate any alleged violation of this section on complaint under oath or upon its initiative." 19 U.S.C. § 1337(b)(1). Section 337(a)(1)(A) declares unlawful, *inter alia*, "[t]he importation into the United States, the sale for importation, or the sale within the United States after importation by the owner, importer, or consignee, of articles that – (i) infringe a valid and enforceable United States patent . . ." 19 U.S.C. § 1337(a)(1)(B). Amazon has stipulated that the accused products have been imported into the United States. Amazon Stipulation at ¶ 3.

Amazon raises what it characterizes as statutory authority and constitutional issues. Amazon Br. at 10–11 and Amazon Reply at 5.[4] Each is addressed in turn.

A. Quorum

Amazon contends that "[w]ith two active Commissioners recused from this Investigation, the two remaining are not a quorum and cannot take any actions or issue a remedy." Amazon Br. at 10 and Amazon Reply at 2. Nokia responds that "[t]he Tariff Act is clear that a quorum is not necessary" but "[r]egardless, the Commission does have quorum" because "[a] commissioner that

[4] Citing Ground Rule 11.2, Amazon contends that Nokia's failure to address these issues in its prehearing brief means that it has waived them. Amazon Br. at 10. That Ground Rule relates to issues addressed at the hearing. No party provided evidence on these issues at the hearing. *See* Amazon Br. at 10–11 and Amazon Reply at 5. There is no waiver by Nokia.

[redacted]

votes 'Recused' is still considered a participant to satisfy any quorum requirement." Nokia Reply at 5–6. Nokia also argues that "this issue is premature" because "the Commission's composition can change in the meantime." *Id.* The Staff contends that "this issue is not properly raised in the post-hearing briefs because it is premature to raise this issue while the Investigation is still before the ALJ" and that "[t]he issue of whether there is a quorum would only arise when the Commission reviews an Initial Determination from the ALJ." Staff Br. at 14.

The ALJ in the 1380 investigation asked the parties to address this issue after which Amazon filed in this investigation correspondence attaching certain pages of the parties' post-hearing briefs and portions of the 1380 hearing transcript. Amazon Correspondence, Ex. 3 at 3–4 (EDIS Doc. ID 836388). Amazon asks that "the ALJ not issue a final ID until the Commission has the power to review it" and states that "[t]he ALJ should, as soon as practicable, issue an initial determination extending the target date by six months and postpone the final ID deadline by a corresponding period." *Id.*

Amazon's quorum arguments are best considered in the first instance by the Commission. And, as noted by Nokia, the Commission's composition can change at any time and that timing is not knowable. Nokia Reply at 5–6. Further, by statute, section 337 investigations must be completed "at the earliest practicable time." 19 U.S.C. 1337(b)(1) ("[t]he Commission shall conclude any such investigation and make its determination under this section at the earliest practicable time"). Delaying or not issuing this final initial determination is contrary to that statutory requirement and only delays the Commission's review of this issue.

B. U.S. Constitution, Article II

Amazon contends that "[t]he Commission's structure violates Article II, rendering it unable to issue a remedy" because "[t]he President must have unfettered 'power to remove'

[redacted]

officers 'who assist him in carrying out his duties'" but that "[t]he ITC's Commissioners and ALJs are not subject to Presidential removal absent a finding of 'cause' or 'good cause,' creating an impermissible 'dual-layer of protection' restricting Executive control." Amazon Br. at 10, *citing Free Enterprise Fund v. Pub. Co. Acct. Oversight Bd.*, 561 U.S. 477, 513–14 (2010), and Amazon Reply at 2–3. Nokia and the Staff contend that Amazon misapplies *Free Enterprise* and "ignore[s] the Supreme Court's explicit guidance" and that the Supreme Court held that administrative law judges are not "similarly situated to the Board" because for example, the Board and administrative law judges perform different functions. Nokia Reply at 6 (citations omitted) and *see* Staff Br. at 15 (same).

I agree with Nokia and the Staff. Amazon does not address the Supreme Court's statements that it is "not decid[ing] the status of other Government employees" and that "[n]othing in our opinion, therefore, should be read to cast doubt on the use of what is colloquially known as the civil service system within independent agencies." *Free Enterprise*, 561 U.S. at 506 and Amazon Reply at 2–3. Amazon also does not address the Supreme Court's statements that "our holding also does not address that subset of independent agency employees who serve as administrative law judges," 561 U.S. at 506, n.10, and "unlike members of the Board, many administrative law judges of course perform adjudicative rather than enforcement or policymaking functions or possess purely recommendatory powers," *id.*, and how those statements affect its argument that the "Commission's structure violates Article II." *See* Amazon Reply at 2–3. I conclude that *Free Enterprise* is specific to its facts and does not implicate this investigation.

C. U.S. Constitution, Article III and Seventh Amendment Jury Trial Right

Amazon contends that "Nokia's requested relief contradicts equitable and legal principles set forth in *eBay*" and that "Nokia is not entitled to the requested relief, which renders the domestic

[redacted]

industry requirement meaningless, turning the Commission into a non-Article III forum where infringement actions are tried without a jury." Amazon Br. at 10 and Amazon Reply at 3. Nokia and the Staff contend that Amazon "completely ignore[s] the Supreme Court's recent guidance in *Jarkesy*" that "certain cases involving 'public rights' do not need [to be] adjudicated by an Article III court," that such cases "include imports and patent rights," and that this investigation is such a case. Nokia Reply at 6 and Staff Br. at 15–16.

I agree with Nokia and the Staff. The Supreme Court in *Jarkesy* noted that there is "a class of cases concerning what we have called 'public rights'" and "no involvement by an Article III court in the initial adjudication is necessary" in those cases. *SEC v. Jarkesy*, 144 S. Ct. 2117 at 2132 (2024). The Court also noted that certain "historic categories of adjudications fall within" the "public rights" exception, including "patent rights." *Id.* at 2133. The Court stressed throughout its opinion that *Jarkesy* involved "fraudulent action" and "the pertinent statutory provisions derive from, and are interpreted in light of, their common law counterparts." *Id.* at 2138. The Court concluded that "[w]hen a matter 'from its nature, is the subject of a suit at the common law,' Congress may not 'withdraw [it] from judicial cognizance.'" *Id.* at 2139. Amazon has not explained how the statutory provisions underlying this investigation "derive from, and are interpreted in light of, their common law counterparts."

Additionally, in a case involving the Commission's predecessor, the United States Tariff Commission, the Supreme Court stated that "we upheld a law authorizing the President to impose tariffs on goods imported by 'unfair methods of competition.'" *Id.* at 2133, *citing Ex parte Bakelite Corp.*, 279 U.S. 438, 446 (1929). The Court explained that the law permitted the President to set whatever tariff was necessary, subject to a statutory cap, to produce fair competition and "[i]f the

President was 'satisfied the unfairness [was] extreme,' the law even authorized him to 'exclude[]' foreign goods entirely." *Id.*

I conclude that the Commission has statutory authority to investigate Nokia's allegations of patent infringement with respect to Amazon's articles imported into the United States.

III. OWNERSHIP RIGHTS IN THE ASSERTED PATENTS

"To bring a complaint before the International Trade Commission, at least one complainant must be the owner or exclusive licensee of the subject intellectual property." *Certain Active Matrix Organic Light-Emitting Diode Display Panels and Modules for Mobile Devices, and Components Thereof*, Inv. No. 337-TA-1351, Comm'n Op. at 14, *quoting Roku, Inc. v. Int'l Trade Comm'n*, 90 F.4th 1367, 1372 (Fed. Cir. 2024) (cleaned up).

The evidence demonstrates that Nokia is the owner by assignment of the asserted patents. JX-0005 and JX-0006. Recording "creates a presumption of validity as to the assignment and places the burden to rebut such a showing on one challenging the assignment." *SiRF Tech., Inc. v. Int'l Trade Comm'n*, 601 F.3d 1319, 1328 (Fed. Cir. 2010). Amazon does not dispute that Nokia is the owner by assignment of the '808 and '134 patents. *See* Amazon Br. and Amazon Reply.

Because the evidence demonstrates that Nokia is the owner by assignment of the asserted patents, I conclude that Nokia was entitled to file its complaint in this investigation.

IV. IMPORTATION

To prove a violation of section 337 by any respondent, the complainant must show that the respondent engaged in "[t]he importation into the United States, the sale for importation, or the sale within the United States after importation by the owner, importer, or consignee" of products accused of infringement. 19 U.S.C. §§ 1337(a)(1)(A)–(B).

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Amazon stipulated that the accused products have been imported into the United States and does not dispute that the importation requirement of section 337 has been satisfied with respect to these products. Amazon Stipulation at ¶ 3. I therefore find that the importation requirement of section 337 has been satisfied with respect to the accused products.

V. LEVEL OF ORDINARY SKILL IN THE ART

One of ordinary skill in the art is a hypothetical person who is presumed to be aware of all pertinent prior art. *Custom Accessories, Inc. v. Jeffrey-Allan Industries, Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1992). Determining the appropriate level of skill for this hypothetical person involves considering the types of problems encountered in the art, prior art solutions to those problems, rapidity with which innovations are made, sophistication of the technology at issue, the educational level of active workers in the field, and the level of education of the inventors themselves. *Daiichi Sankyo Co. v. Apotex, Inc.*, 501 F.3d 1254, 1256 (Fed. Cir. 2007).

The parties identify slightly different articulations of the level of ordinary skill. *See* CDX-0005C.3. During claim construction, as it did at the evidentiary hearing, the Staff contended that one of ordinary skill in the art would have had "a bachelor's degree in electrical engineering, computer engineering, computer science, or a comparable field of study, with about two years of experience with video coding or related technologies. More experience can substitute for less education, and vice versa," which was adopted. *Id.* and Corrected Order No. 38 at 5.

No party has argued that the different articulations of the level of skill in the art materially differ or would lead to a different result on any issue. *See* Amazon Br. at 11 (the parties proposed "substantively equivalent levels of skill and no expert's opinion depends on the level of skill"); Nokia Br. at 51 (the parties "propose slightly different definitions for" one of skill); Staff Br. at 17 and 39–40 (Nokia's and Amazon's experts' opinions are the same regardless of the level of skill

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in the art). To the extent I must determine the appropriate level of skill in the art, I adopt the definition proposed by the Staff. *Genzyme Therapeutic Prods. Ltd. P'ship v. Biomarin Pharm. Inc.*, 825 F.3d 1360, 1372 (Fed. Cir. 2016) (failure to make a specific finding about the required level of skill in the art is not reversible error where the record did not show any meaningful differences in proposed definitions or that the outcome of the case would have been different based on which definition was selected).

VI. THE '808 PATENT

A. Claim Construction

It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005). "[T]here is no magic formula or catechism for conducting claim construction." *Id.* at 1324. Instead, weight may be attached to appropriate sources "in light of the statutes and policies that inform patent law." *Id.*

The terms of a claim are generally given their ordinary and customary meaning, which is the meaning that the term would have to one of skill in the art at the time of the invention. *Id.* at 1312–13. The ordinary meaning of a claim term is its meaning to one of skill in the art after reading the entire patent. *Id.* at 1321. The patent specification "is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996).

In addition to the specification, a court "should also consider the patent's prosecution history, if it is in evidence." *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 980 (Fed. Cir. 1995), *aff'd*, 517 U.S. 370 (1996). The prosecution history, which is intrinsic evidence, is "the complete record of the proceedings before the PTO and includes the prior art cited during the

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examination of the patent." *Phillips*, 415 F.3d at 1317. "[T]he prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be." *Id.* "[B]ecause the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes." *Id.*

In some situations, a "court will need to look beyond the patent's intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background science or the meaning of a term in the relevant art during the relevant time period." *Teva Pharmaceuticals USA, Inc. v. Sandoz, Inc.*, 574 U.S. 318, 331 (2015). Extrinsic evidence is "all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." *Markman*, 52 F.3d at 980.

While expert testimony can be useful "to ensure that the court's understanding of the technical aspects of the patent is consistent with that of a person of skill in the art," such testimony is "generated at the time of and for the purpose of litigation and thus can suffer from bias that is not present in intrinsic evidence." *Phillips*, 415 F.3d at 1318. Further, while extrinsic evidence may be useful, it is less reliable than intrinsic evidence, and its consideration "is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence." *Id.* at 1319. Where the intrinsic record unambiguously describes the scope of the patented invention, reliance on extrinsic evidence is improper. *See Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1308 (Fed. Cir. 1999), *citing Vitronics*, 90 F.3d at 1583.

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During claim construction, the term "skip coding mode" was construed as: "a coding mode in which a zero (non-active) motion vector or a non-zero (active) motion vector is associated with each skip mode macroblock, depending on the characteristics of the motion in image segments surrounding the macroblock in question." Corrected Order No. 38 at 15. This construction was based on the parties' proposals, which all included the language of the adopted construction. *Id.* at 6.

Despite not raising this issue during claim construction, the parties now dispute the meaning of "surrounding the macroblock in question" in the constructions they proposed. Nokia Br. at 17–26; Amazon Reply at 3–11; and Staff Br. at 23–24. The parties also dispute whether certain ordering of steps is required in encoding claims 1 and 10. Nokia Br. at 26–28 (no ordering required); Amazon Reply at 15–21 (ordering required); and Staff Br. at 26–27 (no ordering required). These disputes are addressed below in the context of infringement and technical domestic industry.

B. Infringement and Technical Domestic Industry

In asserting infringement and technical domestic industry, Nokia addresses the accused and domestic industry products together. *See* Nokia Br. at 17–41. The Staff agrees with Nokia's approach, stating that "all products – Accused and Domestic Industry – can be considered together." *See* Staff Br. at 22. Amazon does not take issue with this approach. Amazon Reply at 30–31. The accused and domestic industry products are therefore considered together.

1. Legal Standards

a) Infringement

In a section 337 investigation, the complainant bears the burden of proving infringement of the asserted patent claims by a preponderance of the evidence. *See Spansion, Inc. v. Int'l Trade*

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Comm'n, 629 F.3d 1331, 1349 (Fed. Cir. 2010). This standard "requires proving that infringement was more likely than not to have occurred." *Warner-Lambert Co. v. Teva Pharm. USA, Inc.*, 418 F.3d 1326, 1341, n.15 (Fed. Cir. 2005).

"[W]hoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent." 35 U.S.C. § 271(a). "Literal infringement requires the patentee to prove that the accused device contains each limitation of the asserted claim(s). If any claim limitation is absent, there is no literal infringement as a matter of law." *Bayer AG v. Elan Pharm. Research Corp.*, 212 F.3d 1241, 1247 (Fed. Cir. 2000). For method claims, "infringement under § 271(a) occurs where all steps of a claimed method are performed by or attributable to a single entity." *Akamai Techs., Inc. v. Limelight Networks, Inc.*, 797 F.3d 1020, 1022 (Fed. Cir. 2015), *citing BMC Res., Inc. v. Paymentech, L.P.*, 498 F.3d 1373, 1379-81 (Fed. Cir. 2007). Literal infringement is a question of fact. *Finisar Corp. v. DirecTV Grp., Inc.*, 523 F.3d 1323, 1332 (Fed. Cir. 2008).

"[A] violation of Section 337 may arise from an act of induced infringement." *Suprema, Inc. v. Int'l Trade Comm'n*, 796 F.3d 1338, 1351 (Fed. Cir. 2015). Section 27l(b) of the Patent Act states: "Whoever actively induces infringement of a patent shall be liable as an infringer." 35 U.S.C. § 271(b). "To prevail on a claim of induced infringement, in addition to inducement by the defendant, the patentee must also show that the asserted patent was directly infringed." *Epcon Gas Sys., Inc. v. Bauer Compressors, Inc.*, 279 F.3d 1022, 1033 (Fed. Cir. 2002). "Section 271(b) covers active inducement of infringement, which typically includes acts that intentionally cause, urge, encourage, or aid another to directly infringe a patent." *Arris Group v. British Telecomms. PLC*, 639 F.3d 1368, 1379 n.13 (Fed. Cir. 2011). Liability for inducement requires proof that the

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party had "knowledge that the induced acts constitute patent infringement." *Global-Tech Appliances, Inc. v. SEB S.A.*, 563 U.S. 754, 766 (2011).

b) Technical Domestic Industry

For a patent-based complaint, a violation of section 337 can be found "only if an industry in the United States, relating to the articles protected by the patent . . . exists or is in the process of being established." 19 U.S.C. § 1337(a)(2). The complainant bears the burden of establishing a domestic industry. *John Mezzalingua Assocs., Inc. v. Int'l Trade Comm'n*, 660 F.3d 1322, 1331 (Fed. Cir. 2011); *Certain Toner Cartridges, Components Thereof, and Systems Containing Same*, Inv. No. 337-TA-1174, Initial Determination at 84 (Jul. 23, 2020) (EDIS Doc. ID 716848), *unreviewed by*, Comm'n Notice (Sept. 8, 2020) (EDIS Doc. ID 719096).

The technical prong of the domestic industry requirement in a patent-based section 337 investigation is satisfied when the complainant establishes that it or its licensee is practicing or exploiting the asserted patent. *See* 19 U.S.C. §§ 1337(a)(2) and (3); *Certain Microsphere Adhesives, Process for Making Same, and Products Containing Same, Including Self-Stick Repositionable Notes*, Inv. No. 337-TA-366, USITC Publ'n No. 2949, Comm'n Op. at 8 (Jan. 1996) (EDIS Doc. ID 162915). "The test for satisfying the 'technical prong' of the industry requirement is essentially [the] same as that for infringement, *i.e.*, a comparison of domestic products to the asserted claims." *Alloc, Inc. v. Int'l Trade Comm'n*, 342 F.3d 1361, 1375 (Fed. Cir. 2003). To prevail, the patentee must establish by a preponderance of the evidence that its domestic product practices one or more valid claims of the patent. *Certain Vision-Based Driver Assistance System Cameras, Components Thereof, and Products Containing the Same*, Inv. No. 337-TA-907, Comm'n Op. at 36, USITC Publ'n No. 4866 (Feb. 2019) (EDIS Doc. ID 673954).

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2. Disputed Issues

In a joint stipulation, the parties agreed that "all claim limitations" of the asserted claims are uncontested, except for "(1) whether the accused products and technical [domestic] industry products include a 'skip coding mode' as construed by the Court and (2) whether encoding claims 1 and 10 require an order of steps, resulting in a dispute as to whether the accused products and technical [domestic] industry products practice the limitation 'forming a prediction for the first segment with respect to a reference frame based at least in part on the assigned motion vector for the skip coding mode.'" Joint Stipulation at 2 (EDIS Doc. ID 828760).

In addition to the parties' stipulation, Amazon contends that "Nokia's infringement allegations fail for at least three independent reasons": (1) "[u]nder a proper construction of 'surrounding the macroblock in question,' the Accused Products do not infringe," (2) "the Accused Products encode video using a different order of steps than those recited in the Asserted Claims," and (3) "Nokia did not overcome any of the proof failures Respondents identified prior to the hearing regarding nonessentiality and the shortcomings in Dr. Orchard's analysis." Amazon Reply at 3. The Staff contends that "[a]t the hearing, the evidence showed that the Decoding Accused Products infringe '808 Patent Asserted Claims 7, 16, 22 and 40" and that "[t]he evidence also showed that the Encoding Accused Products infringe '808 Patent Asserted Claims 1, 10, 21, 29 and 48." Staff Br. at 18.

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3. Decoding Claims

a) Claims 7 and 16[5]

(1) Element 7[pre] and Element 16[pre]

Element 7[pre] recites "A method of decoding an encoded video sequence, the method comprising" and element 16[pre] recites "A video decoder for decoding an encoded video sequence, the decoder comprising." Nokia contends that the accused and domestic industry products meet these elements, which is not disputed. Nokia Br. at 28; Amazon Reply at 3–28; and Staff Br. at 22–23.

The evidence supports that the accused and domestic industry products support decoding according to the H.264 standard. Orchard Tr. at 472:3–16 (considering H.264 standard, playback testing, and source code); and CX-5766 (Amazon accused product testing); CX-5767 (domestic industry product testing); and H.264 standard at .0023. The evidence supports that the accused and domestic industry products perform a method of and comprise a decoder for decoding an encoded video sequence. Orchard Tr. at 490:11–18 and 585:23–586:3 (same analysis for accused products as domestic industry products).

(2) Element 7[a] and Element 16[a]

Element 7[a] recites "receiving an indication of a skip coding mode for a first segment" and element 16[a] recites "a demultiplexer for receiving an indication of a skip coding mode assigned to a first segment." Nokia contends that the Amazon accused products and the domestic

[5] During the evidentiary hearing, Amazon referred to claim elements 7[pre], 7[a], 7[b], and 7[c] as 7[a], 7[b], 7[c], and 7[d], respectively. Likewise, elements 16[pre], 16[a], 16[b], and 16[c] were referred to as 16[a], 16[b], 16[c], and 16[d], respectively.

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industry products meet these elements. Nokia Br. at 29–30. The Staff agrees. Staff Br. at 23–24. Amazon only disputes that these elements are met. Amazon Reply at 3–28.

The parties' dispute the meaning of "surrounding the macroblock in question" as used in the construction of "skip coding mode." Nokia Br. at 18-26; Amazon Reply at 3–11; and Staff Br. at 24. That issue is addressed first, followed by whether the accused and domestic industry products meet these elements.

(a) Construction of "Image Segments Surrounding the Macroblock in Question"

Based on the proposals of all parties, the claim term "skip coding mode" was construed as: "a coding mode in which a zero (non-active) motion vector or a non-zero (active) motion vector is associated with each skip mode macroblock, depending on the characteristics of the motion in image segments surrounding the macroblock in question." Corrected Order No. 38 at 5–15.

The parties now dispute the meaning of "image segments surrounding the macroblock in question" in the construction. Nokia contends that this phrase means that there is an analysis of "two or more image segments surrounding the macroblock in question to determine whether to associate a zero (non-active) motion vector or a non-zero motion vector with each skip code macroblock." Nokia Br. at 20. Amazon repeatedly contends that Nokia's argument is that "surrounding the macroblock in question" means "exactly two" macroblocks. Amazon Reply at 1, 3, 5, 9, and 10. Amazon contends more than two macroblocks are required. *Id.*

Nokia contends that Amazon is wrong because Amazon's interpretation requires that skip coding mode "must consider four or more image segments surrounding the macroblock in question." Nokia Br. at 18. Nokia contends "the Court's construction requires an analysis of two or more image segments surrounding the macroblock in question to determine whether to associate

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a zero (non-active) motion vector or a non-zero (active) motion vector with each skip mode macroblock." *Id.* at 20. The Staff agrees with Nokia and states that "nothing in the construction requires more than two macroblocks to be surrounding the macroblock in question" and that "the evidence shows the H.264 standard looks at two surrounding macroblocks, which is enough macroblocks to make a prediction as required by the claims." Staff Br. at 24.

For the reasons discussed below, "image segments surrounding the macroblock in question" in the construction of "skip coding mode" requires two or more image segments surrounding the macroblock.

Amazon contends that Dr. Orchard agreed that if "surrounding" encompasses one segment, MPEG-1 invalidates the claims and if "surrounding" encompasses three segments, there is no infringement and that he therefore opined that "surrounding" means exactly two. Amazon Br. at 11–12. Amazon's argument is misleading. Nokia does not contend that "surrounding" requires "exactly two" and Dr. Orchard did not testify that "image segments surrounding the macroblock in question" requires "exactly two." Amazon Br. at 20–26 and Orchard Tr. at 1892:21–1893:9 ("[M]y opinion is that the only requirement is that it [image segments] qualifies as being plural, because it's segments, and so it would need to be two or more.").[6] The argument Amazon misleadingly states that Nokia is making is also contrary to law. Amazon appears to recognize this, contending that the argument it says Nokia is making (which it is not), and which it hyperbolically characterizes as a "radical interpretation," "flies in the face of virtually every claim construction

[6] I disagree with Amazon that Dr. Orchard "conceded the plain and ordinary meaning of surrounding could not be just two" based on analogizing surrounding image segments with a student in class and surrounding desks. Amazon Reply at 4. The proffered student/desk analogy is not particularly helpful here, where image segments below and to the right, and therefore desks below and to the right, are not image segments for purposes of motion analysis.

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decision since *Markman*." Amazon Reply at 5. On this, Amazon is correct. Claim construction does not depend on validity. *Chef Am., Inc. v. Lamb-Weston, Inc.,* 358 F.3d 1371, 1374 (Fed. Cir. 2004) ("[C]ourts may not redraft claims ... to make them operable or to sustain their validity."). Likewise, "claims may not be construed with reference to the accused device." *Wilson Sporting Goods Co. v. Hillerich & Bradsby Co.*, 442 F.3d 1322, 1331 (Fed. Cir. 2006). That is, while "awareness of the accused product or process [may] supply the parameters and scope of the infringement analysis, including its claim construction component," "a court may not use the accused product or process as a form of extrinsic evidence to supply limitations for patent claim language" and thus claim construction may not be tailored "to fit the dimensions of the accused product or process" to "exclude or include specific features of the accused product or process." *Id.* Because Amazon's "exactly two" surrounding image segments argument depends on validity and infringement arguments (one image segment renders the claims invalid and three image segments renders the claims non-infringed), it is contrary to established law on claim construction.

While Amazon constructs a straw man—what it says is Nokia's position—and then attacks it, what Amazon actually argues is that "surrounding" image segments cannot be two, but instead must be three or more. This is considered as an issue of claim construction.

Curiously, Amazon does not specifically address the claim language in making its arguments. Amazon Br. at 11–12 and Amazon Reply at 3–11. Claims 7 and 16 recite "assigning either a zero motion vector or a predicted non-zero motion vector for the skip coding mode for the first segment based at least in part on the motion information of a second segment neighboring the first segment."[7] The patent defines skip coding mode as "a zero (non-active) motion vector or a

[7] Because encoding claims 1 and 10 contain the same language, this analysis applies to those claims as well.

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non-zero (active) motion vector is associated with each skip mode macroblock, depending on the characteristics of the motion in image segments surrounding the macroblock in question." '808 patent at 17:46–52. That the construction of "skip coding mode" is driven by this definition is agreed to by all parties. Corrected Order No. 38 at 5. That definition identifies "image segments" as a plural. The claim language is not inconsistent with this definition. As a result, the claims do not encompass a skip coding mode in which only one image segment is required. As for the number of multiple image segments, neither any claim language nor the definition of skip coding mode requires a specific number of segments, so long as it is more than one. The claim language and the definition of skip coding mode in the patent thus support that "image segments surrounding the macroblock in question" encompasses two or more.

Amazon contends that the specification supports its position. Amazon Reply at 3–11. Setting aside that the specific definition of skip coding mode in the specification is contrary to its argument, Amazon contends that its argument that "'surrounding' requires *more* than two segments" is supported by the patent's "abstract, summary, and best mode sections," which it contends "all emphasize that the invention 'enabl[es] global or regional motion to [be] taken account of in an efficient manner.'" Amazon Reply at 5. In making this argument, Amazon cites (but does not quote) portions of the specification. *Id.*, *citing* '808 patent at 14:48–51 ("according to the invention, SKIP mode macroblocks can adapt to the motion in the region surrounding them, enabling global or regional motion to [be] taken account of in an efficient manner"); 14:18–22 ("The method according to the invention not only provides an improvement in coding efficiency in the presence of global motion (i.e. motion affecting the entire area of video frame), but also enables regional motion to be represented in an efficient manner."); 14:29–33 ("The decision as to whether a macroblock should be associated with a zero or non-zero motion vector is made by

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analyzing the motion of other macroblocks or sub-blocks in a region surrounding the macroblock to be coded"); and 14:52–55 ("In an advantageous embodiment of the invention, the surrounding macroblocks or sub-blocks whose motion is analyzed are previously encoded macroblocks neighboring the macroblock to be coded.").

Pointing to these portions of the specification, Amazon states that they show that "the '808 patent used specific language when it wanted to identify less than all segments [that] surround the macroblock in question." Amazon Reply at 5–6. Amazon's argument is difficult to understand but appears to be that the specification in the places it points to addresses a region of previously-encoded blocks whereas the definition of "skip coding mode" in the patent does not, more generally referencing "image segments surrounding the macroblock in question." *Id.* and '808 patent at 17:47–52. The specification does not make the distinction Amazon seeks to draw. Instead, after providing the definition of "skip coding mode" as considering the characteristics of "image segments surrounding the macroblock in question," the specification refers to "the surrounding region" and "the region surrounding the current macroblock." '808 patent at 17:60–18:10. Read in context, the portions of the specification Amazon points to does not support that "image segments surrounding the macroblock in question" must be more than those contained in a surrounding region.

Amazon appears to make the same argument with respect to disclosure in the patent, stating:

> In a particularly advantageous embodiment of the invention, the surrounding region of macroblocks or sub-blocks analyzed by the surrounding motion analysis block comprises previously encoded macroblocks neighboring the macroblock to be coded (FIG. 9).

[redacted]

Id. at 19:11–15. Amazon contends that this disclosure and associated Figure 9 "confirm[] the ordinary meaning of 'surrounding.'" Amazon Reply at 6. What is shown in Figure 9, however, is an "example of macroblock partitioning, '808 patent at 15:47–51, and does not limit "image segments surrounding the macroblock in question" to more than two. Indeed, immediately after the discussion of Fig. 9 at 19:11–20, the specification states:

> In an alternative embodiment of the invention the coding modes of already coded macroblocks are taken into account when deciding whether to use a zero valued or non-zero valued skip mode motion vector. For example, if the surrounding motion analysis block determines that there is one or more stationary neighboring macroblock, a zero valued skip mode motion vector is used.

Id. at 19:21–27. This portion of the specification supports that "surrounding image segments" are not limited to more than two.

Amazon also contends that the specification "never limits the 'region surrounding the macroblock' and 'previously encoded region surrounding the macroblock' to two segments." Amazon Br. at 7. As noted previously, Nokia does not contend that two segments, and only two segments, are required. Nonetheless, Amazon contends that when the specification addresses a macroblock above and a macroblock to the left of the macroblock in question, it describes them as being in the vicinity of the macroblock in question and not surrounding it. *Id.*, *citing* '808 patent at 20:6–9. That portion of the specification, however, states that the "surrounding motion analysis block analyzes the motion in the vicinity of the macroblock." *Id.* The specification, therefore, specifically identifies a "surrounding" analysis as including macroblocks "in the vicinity." This is not inconsistent with the other disclosure Amazon points to, stating that the "surrounding motion analysis block 802 classifies the motion in the region surrounding the macroblock." *Id.*, *citing* '808 patent at 19:28–31. The specification does not support the distinction Amazon attempts to draw,

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nor does the testimony of Dr. Orchard, stating only that, without context, vicinity and surrounding are not equivalent. Amazon Reply at 7, *citing* Orchard Tr. at 558:12–18.

Amazon also contends that "[c]onsistent with the '808 patent's express disclosure, Dr. Acton explained why more than two blocks are needed to address global or regional motion." Amazon reply at 7. As Nokia points out, however, Dr. Acton testified that considering four or more image segments would "work better." Nokia Br. at 22, *citing* Acton Tr. at 1512:24–1513:3. Whether more image segments would "work better" is irrelevant because the claim language and specification do not require more than two image segments. In addition, Dr. Acton's testimony about the "aperture problem," which is not addressed in the patent, and his football example, also not addressed in the patent, Amazon Reply at 7–9, do not mandate more than two macroblocks in the claims.

Amazon next contends that "[t]he extrinsic evidence agrees that 'surrounding' means more than "exactly two." Amazon Reply at 9–10 (arguing that video coding standard H.263 characterized three macroblocks as surrounding macroblocks and that JVT's publication leading up to H.264, called JM-1, characterized four macroblocks as surrounding macroblocks). This evidence demonstrates, at most, that in different standards-related documents, different numbers of macroblocks were understood as surrounding a macroblock in question. And while those approaches used more than two macroblocks, they do not stand for or support the proposition that "surrounding" in the construction of the claim term "skip coding mode" in the '808 patent necessarily means more than two macroblocks.

Finally, Amazon contends that "Dr. Orchard's attempt to remove the meaning of 'image segments surrounding' to include any segments in the same frame would not only be redundant, it would improperly vitiate the claim's requirement that the image segments be neighbors and

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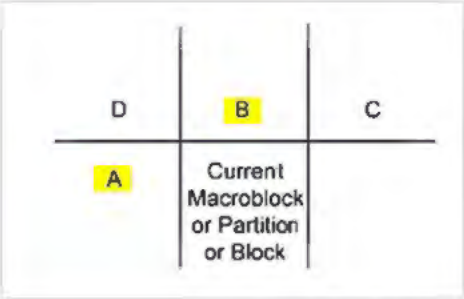
surround the macroblock in question." Amazon Reply at 11. That requirement, however, cannot be vitiated because the claims require "skip coding mode," as it is defined in the patent, and recite assigning "based at least in part on the motion information of a second segment neighboring the first segment."

The evidence supports that "surrounding" in the construction of "skip coding mode" means two or more image segments surrounding the macroblock in question.

(b) Infringement and Technical Domestic Industry

Amazon contends that Nokia failed to prove infringement and technical domestic industry because it identifies "only portions of H.264 directed to analyzing motion vectors on a block-by-block basis, not to analyzing 'characteristics of the motion in image segments surrounding the macroblock'" as required by the construction of skip coding mode. Amazon Reply at 12 and 30 (same arguments for technical domestic industry as non-infringement). In other words, according to Amazon, "analyzing a single, previously coded neighboring block" is not enough to show infringement because "[s]uch an implementation does not analyze characteristics of the motion in image segments, much less image segments surrounding the macroblock in question." *Id.* at 13. Amazon recognizes, however, that products implementing the H.264 standard analyze "two neighboring macroblocks," which the standard identifies as blocks A and B, as shown below:



CX-0024.0046 (H.264 Standard)

[redacted]

Amazon Reply at 13; H.264 standard at .0046; and CDX-0004C.71 (providing annotations).

The evidence supports that the skip coding mode of the H.264 standard associates a zero (non-active) motion vector or a non-zero (active) motion vector with each skip mode macroblock depending on the characteristics of the motion in the image segments above (identified as "B") and to the left (identified as "A") of the macroblock in question (identified as "Current Macroblock"). Orchard Tr. at 491:15–492:20; H.264 standard at .46 and .155; and CDX-004C.71.

The evidence supports that if the image segments above and to the left have non-zero motion vectors, then an "active" motion vector generation process is followed based on a median calculation from the motion vectors of three surrounding image segments. Orchard Tr. at 495:22–496:14 (discussing H.264 standard at .155 and 163) and 515:18–516:14 (discussing an "active" motion scenario from encoder testing evidence). On the other hand, if the image segment above or the image segment to the left has a zero motion vector and uses the same reference picture as the current macroblock, then a "non-active" motion vector generation process is followed, and the current macroblock is automatically assigned a zero-valued motion vector. Orchard Tr. at 490:19–492:20 and 515:4–17.

The evidence supports that the accused and domestic industry products receive an indication of a skip coding mode for a first segment in the form of the mb_skip_run or mb_skip_flag indications. Orchard Tr. at 492:21–493:13 and H.264 standard at .0102. Subclause 7.4.4 of the H.264 standard provides the skip indication semantics, and the definition of a skipped macroblock states that the skip indication is the only data coded for the macroblock. Orchard Tr. at 490:19–492:20 (testifying about the construction of skip coding mode) and 492:21–493:13 (testifying about the "receiving an indication" aspect of the claims). The evidence also supports that the accused and domestic industry products include demultiplexers for receiving an indication

[redacted]

of a skip coding mode. Orchard Tr. at 493:14–494:2 and 585:23–586:3 (same analysis for accused products as domestic industry products) and H.264 standard at .0054.

Emphasizing the importance of "account[ing] for regional or global motion," Amazon contends that "surrounding" the macroblock "requires multiple macroblocks to be analyzed together" in order to "consider the 'characteristics of motion in image segments surrounding the macroblock in question.'" *Id.* at 14–15. This is so because "for accurate motion estimation, analysis extends to at least four neighboring macroblocks, rather than just one or two macroblocks analyzed in isolation." *Id.* at 15.

Amazon essentially contends that in order to analyze the characteristics of the motion in image segments surrounding the macroblock, it is not enough to analyze two macroblocks and that "for accurate motion estimation, analysis extends to at least four neighboring macroblocks." Amazon Reply at 15. Amazon's non-infringement argument is a re-packaging of its claim construction argument and is based on its position that the claims require an analysis of more than two macroblocks. This argument is rejected for the reasons explained above with respect to the meaning of "image segments surrounding the macroblock in question."

The evidence supports that the accused and domestic industry products meet these claim elements. This evidence includes not just Dr. Orchard's analysis of the H.264 standard but device testing and analysis and source code, confirming that the accused and domestic industry products operate in accordance with the H.264 standard. Orchard Tr. at 501:13–509:1 (describing materials in addition to the H.264 standard that were considered); CDX-0004C.82–89; CX-5766 (Amazon accused product testing); CX-5767 (domestic industry protect testing); CX-5756 (video analysis); CPX-0001 (Amazon testing videos); CPX-0004C–09C and 12C (source code).

[redacted]

(3) Element 7[b] and Element 16[b]

Element 7[b] recites "assigning either a zero motion vector or a predicted non-zero motion vector for the skip coding mode for the first segment based at least in part on the motion information of a second segment neighboring the first segment" and element 16[b] recites "a motion compensated prediction block for assigning either a zero motion vector or a predicted non-zero motion vector for the skip coding mode for the first segment based at least in part on the motion information of a second segment neighboring the first segment." Nokia contends that the accused and domestic industry products meet these elements. Nokia Br. at 30–32. The Staff agrees. Staff Br. at 24. Amazon only disputes that "skip coding mode" is met. Amazon Reply at 3–28.

The evidence supports that the accused and domestic industry products assign either a zero (non-active) or predicted non-zero (active) motion vector for the skip coding mode for the first segment (a current macroblock) based on the motion information of the blocks to the left and above the macroblock in question, which is "based at least in part on the motion information of a second segment neighboring the first segment," as claimed. Orchard Tr. at 494:3–497:17 and H.264 standard at .0155, .0163 and .0046. Dr. Orchard testified that subclause 8.4.1.1 shows that a skip coded macroblock is automatically assigned a zero (non-active) motion vector when the neighbor above (block B) or left (block A) has a zero motion vector; when this is not the case, the skip coded macroblock is assigned a predicted non-zero (active) motion vector, the value of which is derived later in the decoding process. Orchard Tr. at 495:10–21 (describing "non-active" scenarios) and 495:22–496:14 (describing "active" scenarios). The evidence supports that these elements are met by the accused and domestic industry products.

[redacted]

(4) Element 7[c] and Element 16[c]

Element 7[c] recites "forming a prediction for the first segment with respect to a reference frame based at least in part on the assigned motion vector for the skip coding mode, wherein the assigned motion vector is one of the zero motion vector and the predicted non-zero motion vector" and element 16[c] recites "[a motion compensated prediction block for] forming a prediction for the first segment with respect to a reference frame based at least in part on the assigned motion vector for the skip coding mode, wherein the assigned motion vector is one of the zero motion vector and the predicted non-zero motion vector." Nokia contends that the accused and domestic industry products meet these elements. Nokia Br. at 32–33. The Staff agrees. Staff Br. at 25. Amazon only disputes that "skip coding mode" is met. Amazon Reply at 3–28.

The evidence supports that the accused and domestic industry products each form a prediction for a skip coded macroblock with respect to a reference frame using assigned motion vectors for the skip coding mode according to subclause 8.4.2 of the H.264 standard. Orchard Tr. at 497:20–499:9 and H.264 standard at .0166–.0167. Subclause 8.4.2 defines the decoding process for inter-prediction samples and takes as inputs the motion vector and reference frame for a given macroblock. *Id.* The output of this process is the prediction created using the assigned motion vector and reference frame. *Id.* The evidence supports that these elements are met in the accused and domestic industry products.

b) Claim 22

Claim 22 recites "A multimedia terminal comprising a decoder according to claim 16." Nokia contends that the accused and domestic industry products meet the additional elements of this claim. Nokia Br. at 33. The Staff agrees. Staff Br. at 25. Amazon does not dispute that the

[redacted]

additional elements of this claim are met. Amazon Reply at 3–28. The evidence supports that the accused and domestic industry products are multimedia terminals, as shown below:

CX-0042.003 (Fire Max 11)

CX-0991.0003 (Surface Pro 9)

Orchard Tr. at 501:2–12 and CDX-0004C.81. The evidence supports that the additional elements of claim 22 are met by the accused and domestic industry products.

c) Claim 40

Claim 40 recites "A method according to claim 7, further comprising: deriving the predicted non-zero motion vector based at least in part on the motion vector of the second segment and motion vector of a third segment neighboring the first segment." Nokia contends that the accused and domestic industry products meet the additional elements of this claim. Nokia Br. at 34–35. The Staff agrees. Staff Br. at 25. Amazon does not dispute that the additional elements of this claim are met. Amazon Reply at 3–28.

The evidence supports that the accused and domestic industry products follow a derivation process for active motion vectors to take a median of three neighboring motion vectors according to subclause 8.4.1.3 of the H.264 Standard. Orchard Tr. at 499:10–500:23 and H.264 standard at .163–.164. When a skip coded macroblock is assigned an active motion vector, the derivation process to determine the active motion vector's value follows subclause 8.4.1.3, taking the median

[redacted]

motion vector value of "three different neighboring blocks, A, B, and C." Orchard Tr. at 499:10–500:23. The derivation is based at least in part on the motion vector of the second segment and the motion vector of a third segment neighboring the first segment. *Id.* The evidence supports that the additional elements of claim 40 are met by the accused and domestic industry products.

4. Encoding Claims

a) Claims 1 and 10[8]

(1) Element 1[pre] and Element 10[pre]

Element 1[pre] recites "A method of encoding a video sequence, the method comprising" and element 10[pre] recites "A video encoder for encoding a video sequence, the encoder comprises." Nokia contends that the accused and domestic industry products meet these elements. Nokia Br. at 35. The Staff agrees. Staff Br. at 26–27. Amazon does not dispute that these elements are met. Amazon Reply at 3–28.

The evidence supports that the accused and domestic industry products encode video into H.264-compliant formats and include encoders for doing the same. Orchard Tr. at 510:18–511:46. Dr. Orchard performed encoding testing on representative products. CX-5766 (accused product testing) and CX-5767 (domestic industry product testing). The evidence supports that these elements are met by the accused and domestic industry products.

(2) Element 1[a] and Element 10[a]

Element 1[a] recites "assigning a skip coding mode to a first segment of a first frame of the sequence" and element 10[a] recites "a coding controller for assigning a skip coding mode to

[8] During the evidentiary hearing, Amazon referred to claim elements 1[pre], 1[a], 1[b], and 1[c] as 1[a], 1[b], 1[c], and 1[d], respectively. Likewise, elements 10[pre], 10[a], 10[b], and 10[c] were referred to as 10[a], 10[b], 10[c], and 10[d], respectively.

[redacted]

a first segment." Nokia contends that the accused and domestic industry products meet these elements. Nokia Br. at 36. The Staff agrees. Staff Br. at 27. Amazon disputes that these elements are met. Amazon Reply at 3–28. Amazon's arguments as to these claim elements are the same as its arguments with respect to the decoding claims. *Id.*

The evidence supports that the accused and domestic industry products encode video into an H.264-compliant format and, in doing so, assign skip coding modes to first segments of first frame of video sequences. Orchard Tr. at 510:18–511:24 and CX-5766–67 (accused and domestic industry product testing). Dr. Orchard performed encoding testing on representative products and all products tested encoded H.264-compliant video, assigned skip coding mode to macroblocks and used a coding controller to make this assignment. Orchard Tr. at 512:8–514:3 (encoding) and 474:18–477:22 (decoding) and CX-5766–67. Based on this evidence and for the reasons explained with respect to elements 7[a] and 16[a], the evidence supports that these elements are met by the accused and domestic industry products.

(3) Element 1[b] and Element 10[b]

Element 1[b] recites "assigning either a zero motion vector or a predicted non-zero motion vector for the skip coding mode for the first segment based at least in part on the motion information of a second segment neighboring the first segment" and element 10[b] recites "a motion estimation block for assigning either a zero motion vector or a predicted non-zero motion vector for the skip coding mode for the first segment based at least in part on the motion information of a second segment neighboring the first segment." Nokia contends that the accused and domestic industry products meet these elements. Nokia Br. at 36–37. The Staff agrees. Staff Br. at 28. Amazon only disputes that "skip coding mode" is met. Amazon Reply at 3–28.

[redacted]

The evidence supports that the accused and domestic industry products encode H.264-compliant video including P_Skip macroblocks, and that each skip coded block is assigned either a zero (non-active) or predicted non-zero (active) motion vector based on the motion information of image segments surrounding the macroblock in question. Orchard Tr. at 514:4–517:1. Dr. Orchard performed encoding testing on the accused and domestic industry devices, analyzed the resulting bitstreams, and determined that the skip coded macroblocks associated non-active motion vectors where image segments above or to the left had zero motion vectors. Orchard Tr. at 514:4–515:17 (discussing non-active scenarios) and CX-5766–67 (accused and domestic industry product testing). The evidence supports that if image segments above and to the left have a non-zero motion vector, the skip coded macroblock receives a motion vector through the active scenario, in which a median calculation is performed using the motion vectors from the blocks to the left, top, and top right. Orchard Tr. at 5:15:18–516:14 and CX-5766–67. The evidence also supports that the accused products and domestic industry products include a motion estimation block as recited in element 10[b]. Orchard Tr. at 516:16–517:1. The evidence thus supports that these elements are met by the accused and domestic industry products.

(4) Element 1[c] and Element 10[c]

Element 1[c] recites "forming a prediction for the first segment with respect to a reference frame based at least in part on the assigned motion vector for the skip coding mode, wherein the assigned motion vector is one of the zero motion vector and the predicted non-zero motion vector" and element 10[c] recites "[a motion estimation block for] forming a prediction for the first segment with respect to a reference frame based at least in part on the assigned motion vector for the skip coding mode, wherein the assigned motion vector is one of the zero motion vector and the

[redacted]

predicted non-zero motion vector." Nokia contends that the accused and domestic industry products meet these elements. Nokia Br. at 38–39. The Staff agrees. Staff Br. at 28–29.

The parties dispute whether ordering of steps is required. Nokia Br. at 26–28 (no ordering required); Amazon Reply at 15–21 (ordering required); and Staff Br. at 26–27 (no ordering required).

Claim 1 recites:

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

'808 patent at claim 1. Claim 10 is similar and was treated together with claim 1 for purposes of this argument. Nokia Br. at 26–28; Amazon Reply at 15–21; and Staff Br. at 26–27.

Amazon contends that "the first two assigning limitations [elements [a] and [b]] provide antecedent bases ('a skip coding mode' and 'a…motion vector') for the steps that follow." Amazon Reply at 19, *citing* Acton Tr. at 1382:14–1383:20, 1385:3–1387:19, and 1426:10–1427:3. As a result of this antecedent basis, Amazon contends that the accused and domestic industry products do not infringe. *Id.* at 17–18. Amazon argues that Dr. Orchard conceded that the skip coding mode

[redacted]

in elements 1[c] and 10[c] ("providing…an indication of the skip coding mode") "refers to the skip coding mode that was assigned in the first assigning limitation." Amazon Reply at 20.

As an initial matter, there is no dispute that the "assigning" of elements 1[b] and 10[b] occurs before the "forming a prediction" of elements 1[c] and 10[c]. That is, the parties agree that "forming a prediction" in elements 1[c] and 10[c] is based on "the assigned motion vector for the skip coding mode" that was assigned in the "assigning either a zero motion vector or a predicted non-zero motion vector for the skip coding mode" of elements 1[b] and 10[b]. Amazon Reply at 16; Staff Br. at 26–27; Nokia Br. at 26–28; and Orchard Tr. at 527:1–18. The issue, therefore, is whether elements 1[a] and 10[a] must be performed before elements 1[c] and 10[c] or can be performed after.

"As a general rule, [u]nless the steps of a method [claim] actually recite an order, the steps are not ordinarily construed to require one." *Mformation Techs., Inc. v. Rsch. in Motion Ltd.*, 764 F.3d 1392, 1398 (Fed. Cir. 2014). "[A] claim 'requires an ordering of steps when the claim langnage, as a matter of logic or grammar, requires that the steps be performed in the order written, or the specification directly or implicitly requires' an order of steps." *Id.* Antecedent basis alone does not necessarily mandate a specific order. *Interactive Gift Express, Inc. v. Compuserve Inc.*, 256 F.3d 1323, 1328 (Fed. Cir. 2001) (holding that step one of a method claim could be performed after step four, even though step four referred to "the catalog code," which was introduced iu step 1, stating "there is no reason why step one[ ] . . . must occur before step four"). The law does not support that a step reciting "said" or "the," referring to an earlier object, must be performed after the step that first introduces the object.

In the claims here, elements 1[a] and 10[a] introduce "a skip coding mode" and "a first segment," which are referred to in elements 1[b] and 10[b] and in elements 1[c] and 10[c]. As a

[redacted]

result, there is antecedent basis. The specification demonstrates, however that that is not determinative. The specification discloses:

> The details of the motion-compensated prediction performed by video encoder 600 will now be described in detail.
>
> Encoder 600 performs motion-compensated prediction in a manner similar to the previously described JVT codec. In other words, it is adapted to ***assign a coding mode to each INTER-coded macroblock depending on the characteristics of the macroblock and the motion in the video sequence being coded***. When examining which coding mode to assign to particular macroblock, motion estimation block 630 performs a motion estimation operation for each coding mode in turn. Motion estimation block 630 receives the blocks of luminance and chrominance values which make up the macroblock to be coded for use in motion estimation via line 128 (see FIG. 6). It then selects each of the possible coding modes one after the other, in turn, and performs motion estimation in order to identify a best match for the macroblock in the reference frame, on the basis of the selected coding mode and the pixel values of the macroblock to be coded. (The best match will comprise one or more best-matching regions of pixel values, depending on the coding mode). Each best-match is associated with an overall cost value, for example, a linear combination of the sum of absolute differences between the pixel values in the macroblock under examination and the best matching region in the reference frame, and an estimated number of bits required to code the mode and represent motion vectors. Once a best match has been obtained for each coding mode, motion estimation block 630 selects that coding mode which yields the smallest overall cost value as the coding mode for the current macroblock.

'808 patent at 17:13–43 (emphasis added).

This portion of the specification clearly discloses that encoder 600 performs motion-compensated prediction by "assign[ing] a coding mode to each INTER-coded macroblock depending on the characteristics of the macroblock and the motion in the video sequence being coded." In other words, the specification discloses that the skip coding mode is assigned after the characteristics of the macroblock, including the motion "in the video sequence being coded" is known. This makes sense. The assigned coding mode cannot be known before having the information that must be known to assign it. This portion of the specification tracks the language of claims 1 and 10 such that the "assigning a skip coding mode" in elements 1[a] and 10[a] is

[redacted]

performed after "forming a prediction" in elements 1[c] and 10[c]. The specification thus specifically refutes the ordering that Amazon advocates.

In addition, as Dr. Acton agreed, under his interpretation, the only way to practice claims 1 and 10 would require that an encoder choose skip coding mode blindly, without first determining whether it should be selected. Acton Tr. at 1502:15–1503:17 (testifying that step [a] is the "final choice" of skip coding mode) and 1504:6–11 (agreeing that with step [a] first, "I just got to pick skip [coding mode] blind"). That interpretation is not required by the claims, is inconsistent with the specification, and defies common sense. I agree with Dr. Orchard that under Dr. Acton's interpretation, the claims "would not make any sense" and that "[i]f, in fact, we were forced to decide first and then required to do a forming as part of the encoding process, that would not make any sense and it would lead to the recognition that the assigning would have to be done without any – based on nothing." *Id.* at 528:8–529:9 and *see* 526:15–528:7. The evidence supports that the "ordering" Amazon advocates is not supported by the specification and not required by the claims.

Dr. Orchard testified that he analyzed test data for the accused and domestic industry products with respect to encoding claims 1 and 10. Orchard Tr. at 510:14–17. Dr. Orchard provided detailed and credible testimony on the testing data and how it relates to and shows the practice by the accused and domestic industry products for each of the elements of claims 1 and 10. *Id.* at 510:18–512:7 (preamble); 512:8–514:3 (step [a]); 514:4–517:1 (step [b]); 517:2–518:5 (step [c]); 518:6–520:11 (step [d]); and CDX-0004C.91–.105. His analysis and testimony were not challenged on cross examination. *Id.* at 532:18–588:2. Dr. Acton, by contrast, provided perfunctory testimony regarding the operation of the accused and domestic industry products supporting his non-infringement opinions. Acton Tr. at 1385:3–1387:19. That testimony was based on RDX-0012C.108, which Dr. Acton characterized as "basically, a high-level description of what

[redacted]

NVIDIA does." *Id*. at 1385:11–14. Amazon relies on Dr. Acton's testimony and that demonstrative exhibit, RDX-0012C at 108, reproduced below:

[redacted]

There are multiple problems with Amazon's argument. First, Amazon relies on a block/flow diagram that appears to be an Nvidia document, complete with an Nvidia logo and titled "[redacted]." Amazon Reply at 17, showing RDX-0012C.108. As support, RDX-0012C.108 cites the entirety of RX-2168C, the declaration of Sangeun Han, a senior video architect at Nvidia. That declaration does not include the block/flow diagram Amazon presented at the evidentiary hearing as RDX-0012C.108 and which it reproduced in its post-hearing reply brief. Instead, without saying so, Amazon itself apparently created the block/flow diagram, making it look like an Nvidia document. Amazon's reliance on this "evidence" is troubling, to say the least. Amazon's block/flow diagram is: (1) a demonstrative without clear evidentiary support; and (2) supposedly based on the declaration of a witness not available for

[redacted]

cross examination. Dr. Acton's testimony based on this "evidence" is not credible and is not given any weight.

More problematically still, Amazon's arguments, Amazon Reply at 15–18, are not supported by Dr. Acton's testimony. With respect to any "ordering" arguments, the most that can be gleaned from Dr. Acton's testimony is his view that selecting the skip coding mode is performed last in the Nvidia chips.[9] Acton Tr. at 1426:22–1427:3. As noted previously, however, the claims do not require selecting skip coding mode before determining whether it makes sense to do so.

The evidence supports that the accused and domestic industry products encode H.264-compliant video and, when doing so, form a prediction for the first segment with respect to a reference frame based at least in part on the assigued motion vector for the skip coding mode. Orchard Tr. at 517:2–518:5 and CX-5766–67 (accused and domestic industry product device testing). The evidence also supports that the accused and domestic industry products include a motion estimation block according to element 10[c]. *Id.* The evidence supports that these claim elements are met.

(5) Element 1[d] and Element 10[d]

Element 1[d] recites "providing in an encoded bitstream an indication of the skip coding mode, wherein no further motion vector information for the first segment is coded in the encoded bitstream" and element 10[d] recites "a multiplexer for providing in an encoded bitstream an indication of the skip coding mode, wherein no further motion vector information for the first segment is coded in the encoded bitstream." Nokia contends that the accused and domestic industry

[9] No other ordering argument was clearly set out in Amazon's pre-hearing brief and was therefore abandoned. Ground Rule 11.2.

[redacted]

products meet these elements. Nokia Br. at 39–40. The Staff agrees. Staff Br. at 29. Amazon disputes only that "skip coding mode" is met. Amazon Reply at 3–28.

The evidence supports that the accused and domestic industry products provide indications of a skip coding mode in encoded bitstreams, wherein no further motion vector information is coded in those encoded bitstreams. Orchard Tr. at 518:6–520:11 and CX-5766–67 (accused and domestic industry product testing); and CPX-16 and 18 (testing bitstreams in accused and domestic industry products). The "mb_skip_flag" indication is included in the bitstream for the skip coded macroblock. Orchard Tr. at 518:6–520:11. The syntax information presented in the screenshot includes all syntax for the macroblock level, including only the indication of the skip coding mode. *Id.* The evidence also supports that the accused and domestic industry products include a multiplexer according to claim element 10[d]. *Id.* The evidence thus supports that these claim elements are met.

b) Claim 21

Claim 21 recites "A multimedia terminal, comprising an encoder according to claim 10." Nokia contends that the accused and domestic industry products meet this claim. Nokia Br. at 40. The Staff agrees. Staff Br. at 29. Amazon does not dispute that the additional elements of this claim are met. Amazon Reply at 3–28. The evidence supports that the accused and domestic industry products are multimedia terminals, as shown below:

[redacted]

CX-0042.003 (Fire Max 11)

CX-0991.0003 (Surface Pro 9)

Orchard Tr. at 520:14–23 and CDX-0004C.106.

c) Claims 29 and 48

Claim 29 recites "A method according to claim 1, further comprising: deriving the predicted non-zero motion vector based at least in part on the motion vector of the second segment and motion vector of a third segment neighboring the first segment" and claim 48 recites "An encoder according to claim 10, wherein the motion estimation block further arranged to derive the predicted non-zero motion vector based at least in part on the motion vector of the second segment and motion vector of a third segment neighboring the first segment." Nokia contends that the accused and domestic industry products meet these claims. Nokia Br. at 41. The Staff agrees. Staff Br. at 29–30. Amazon does not dispute that the additional elements of these claims are met. Amazon Reply at 3–28.

The evidence supports that in active scenarios, the accused and domestic industry products derive the predicted non-zero motion vector based at least in part on the motion vectors of a second segment and third segment neighboring the first segment (the current skip mode macroblock). Orchard Tr. at 520:24–522:12; CDX-0004C.107; CX-5766–67 (accused and domestic industry product testing); and CPX-0016 and 18 (testing bitstreams in accused and domestic industry

[redacted]

products). Dr. Orchard described how the accused and domestic industry products derive predicted non-zero motion vectors in "active" skip mode scenarios based on motion vectors of three surrounding macroblocks. *Id.*

The evidence supports that the accused and domestic industry products meet the additional elements of claims 29 and 48.

5. Indirect Infringement

Nokia contends that Amazon "induce[s] infringement of the method claims by customers through advertising and encouraging their customers to decode and encode with the Accused Products." Nokia Br. at 3, *citing* Orchard Tr. at 530:18–532:8 and Botner Tr. at 897:4–13 and 902:14–903:5. The Staff contends that the evidence shows that "Respondents induce their customers to infringe by encouraging them to use the accused H.264 video functionality," relying on Dr. Orchard's testimony concerning user guides, specifications and advertisements as well as Dr. Botner's testimony regarding survey results. Staff Br. at 30. Other than disputing direct infringement, Amazon does not separately dispute induced infringement of the asserted method claims. Amazon Reply at 3–28. The evidence supports that Amazon induces its customers to infringe method claims 1, 7, 29, and 40.

C. Validity

Amazon presents two validity challenges.[10] It first contends that a document titled "ISO/IEC 11172-2 – Information Technology – Coding of moving pictures and associated audio for digital storage media at up to about 1,5 Mbits/s – Part 2: Video," RX-0540, anticipates or

[10] The PTAB granted institution of Amazon's two requests for inter partes review of claims of the '808 patent, including the asserted claims, on grounds different from those presented at the evidentiary hearing. Amazon Notice at 1–2 and Exs. A and B (EDIS Doc. ID 839355).

[redacted]

renders obvious the asserted claims. Amazon Br. at 13–21. The parties call this document "MPEG-1," which is how it will be referred to here. Nokia and the Staff contest the validity challenge based on MPEG-1. Nokia Reply at 12–25 and Staff Br. at 36–37. The parties "agree that claims 1, 7, 10, and 16 are uncontested except as to whether the term 'skip coding mode' as construed by the Court is anticipated or rendered obvious by MPEG-1." Joint Stipulation at 1.[11]

Amazon also contends that the asserted claims are "invalid in view of the JVT's first draft of the H.264 standard in December of 2002, JVT-F100," that "[t]he private parties have stipulated that JVT-F100 discloses all limitations of the Asserted Claims, such that it would anticipate the Asserted Claims if JVT-F100 qualifies as prior art," and that "because Nokia added new matter directed to what had been adopted into H.264 into its utility application, the Asserted Claims are not entitled to priority through the provisional." Amazon Br. at 21–28. Nokia and the Staff both contend that the asserted claims are entitled to the priority date of the provisional application such that JVT-100 is not prior art. Nokia Reply at 25–29 and Staff Br. at 37–38.

1. Legal Standard

Patents are presumed valid. *See* 35 U.S.C. § 282; *Microsoft Corp. v. i4i Ltd. P'ship*, 131 S. Ct. 2238, 2242–43 (2011). A party asserting patent invalidity as an affirmative defense has the burden of overcoming this presumption by clear and convincing evidence. *See Microsoft*, 131 S. Ct. at 2243.

Anticipation requires that a single reference disclose each and every element of the claimed invention. *In re Smith Int'l, Inc.*, 871 F.3d 1375, 1381 (Fed. Cir. 2017) ("A patent claim is

[11] Amazon states that the parties have stipulated that MPEG-1 meets the asserted independent claims. Amazon Br. at 13, header V.A.1. This is false. Nokia Reply at 12–25 and Staff Br. at 36–37.

[redacted]

anticipated 'only if each and every element is found within a single prior art reference, arranged as claimed,'" *quoting Summit 6, LLC v. Samsung Elecs. Co.*, 802 F.3d 1283, 1294 (Fed. Cir. 2015). "Prior art that must be modified to meet the disputed claim limitation does not anticipate the claim." *Enplas Display Device Corp. v. Seoul Semiconductor Co., Ltd*, 909 F.3d 398, 405 (Fed. Cir. 2018), *citing In re Chudik*, 851 F.3d 1365, 1374 (Fed. Cir. 2017) ("a prior art reference that must be distorted from its obvious design does not anticipate a patent claim") (internal quotations omitted); *In re Wells*, 53 F.2d 537, 539 (C.C.P.A. 1931); *accord Topliff v. Topliff*, 145 U.S. 156, 161 (1892) ("It is not sufficient to constitute an anticipation that the device relied upon might, by modification, be made to accomplish the function performed by the patent in question, if it were not designed by its maker, nor adapted, nor actually used, for the performance of such functions.").

Under 35 U.S.C. § 103, a claim may be found invalid as obvious if "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." 35 U.S.C. § 103(a). Because obviousness is determined at the time of invention, rather than the date of litigation, "[t]he great challenge of the obviousness judgment is proceeding without any hint of hindsight." *Star Scientific, Inc. v. R.J. Reynolds Tobacco Co.*, 655 F.3d 1364, 1375 (Fed. Cir. 2011).

When a claim is challenged as obvious, the critical inquiry in determining the differences between the claimed invention and the prior art is whether there is an apparent reason to combine known elements in the fashion claimed by the patent at issue. *See KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 417–418 (2007). Thus, when a respondent relies upon a combination of multiple prior art references to show obviousness, "the burden falls on the patent challenger to show by clear and convincing evidence that a person of ordinary skill in the art would have had reason to

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attempt to make the composition or device, or carry out the claimed process, and would have had a reasonable expectation of success in doing so." *PharmaStem Therapeutics, Inc. v. ViaCell, Inc.*, 491 F.3d 1342, 1360 (Fed. Cir. 2007) (citations omitted).

Obviousness is a determination of law based on underlying determinations of fact. *Star Scientific*, 655 F.3d at 1374. The factual determinations behind a finding of obviousness include: (1) the scope and content of the prior art, (2) the level of skill in the art, (3) the differences between the claimed invention and the prior art, and (4) secondary considerations of non-obviousness. *KSR*, 50 U.S. at 399, *citing Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). Secondary considerations of non-obviousness include commercial success, long felt but unresolved need, copying and the failure of others. *Id.* When present, secondary consideration "give light to the circumstances surrounding the origin of the subject matter sought to be patented," but they are not necessarily dispositive on the issue of obviousness. *Geo. M. Martin Co. v. Alliance MachSys. Int'l*, 618 F.3d 1294, 1304–06 (Fed. Cir. 2010). For secondary considerations to be given substantial weight in an obviousness determination, there must be a nexus between the evidence and the merits of the claimed invention. *See W. Union Co. v. MoneyGram Payment Sys. Inc.*, 626 F.3d 1361, 1372–73 (Fed. Cir. 2010), *citing In re GPAC Inc.*, 57 F.3d 1573, 1580 (Fed. Cir. 1995).

2. MPEG-1

MPEG-1 was published on August 1, 1993. RX-0540 at cover. There is no dispute that MPEG-1 is prior art to the '808 patent under 35 U.S.C. § 102(b). Amazon Br. at 13 ("MPEG-1, published on August 1, 1993, is prior art to the '808 patent irrespective of the patent's priority date"); *see* Nokia Reply at 12–25 (no dispute) and Staff Br. at 37–38 (same).

The MPEG-1 document states that the standard was "developed in response to the growing need for a common format for representing compressed video on various digital storage media"

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and addresses how "motion video can be manipulated as a form of computer data and can be transmitted and received over existing and future networks." MPEG-1 at .0004.

A further word is required regarding Amazon's prior art invalidity arguments based on MPEG-1 because the specific bases of its arguments are unclear. While making no attempt to separate its arguments, Amazon appears to contend that MPEG-1 anticipates the asserted claims, on its own renders the asserted claims obvious, and in combination with (one or both?—it is unclear) documents it calls H.263 and JM-1 renders the asserted claims obvious. Amazon Br. at 12–19. Because Amazon for the most part briefs its invalidity arguments by rebutting what it says Nokia has argued, it is difficult to determine what Amazon's actual affirmative (burden of proof) arguments actually are. Nonetheless, to the extent understood and giving Amazon every reasonable benefit of the doubt as to what arguments it is actually making, Amazon's contentions are addressed below.

With respect to Amazon's argument based on MPEG-1 in combination with H.263 and (or perhaps, or) JM-1, H.263 refers to a February 1998 ITU-T publication titled "Series H: Audiovisual and Multimedia Systems Infrastructure of audiovisual services – Coding of moving video." RX-0616. The JM-1 document Amazon relies on is the same JM-1 document discussed in the '808 patent. '808 patent at 10:34–39 and RX-0546. There is no dispute that H.263 and JM-1 are prior art to the '808 patent under 35 U.S.C. § 102(b).

a) Anticipation

Considering Amazon's anticipation argument first, Amazon's own expert, Dr. Acton, stated that he was offering an opinion only as to obviousness based on MPEG-1. Acton Tr. at 1390:5–9 (articulating his opinion as "that MPEG-1 from 1993 renders the claims obvious") and 1393:20–25 ("[u]nder my view [MPEG-1] doesn't have the surrounding element, but one of

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skill could take from JM1 or H.263 the multiple macroblock motion vector prediction and put it together with MPEG-1.") To the extent Amazon has maintained an anticipation argument in the face of its expert not opining on anticipation and in the face of conceding that "MPEG-1's predictor" "uses a single macroblock," Amazon Reply at 18, section 2.4.4.4 of MPEG-1 states that "[i]n B-pictures, the skipped macroblock is defined to have the same macroblock_type (forward, backward, or both motion vectors) as the prior macroblock, differential motion vectors equal to zero, and no DCT coefficients. In a B-picture, a skipped macroblock shall not follow an intra-coded macroblock." MPEG-1 at .0054–55. Dr. Acton summarized this section of MPEG-1 as: "So in MPEG-1 straight up, you're looking at a single macroblock to the left. And so that would be its macroblock – its single macroblock motion vector prediction." Acton Tr. at 1394:1–6. Dr. Orchard consistently testified that MPEG-1 does not anticipate the asserted claims because it uses a single macroblock for skip coding. Orchard Tr. at 1854:5–18. The definition of skip coding mode is that "a zero (non-active) motion vector or a non-zero (active) motion vector is associated with each skip mode macroblock, depending on the characteristics of the motion in image segments surrounding the macroblock in question." '808 patent at 17:46–52. That definition identifies "image segments" as a plural. Because MPEG-1 considers only a single macroblock, there is no anticipation.

b) Obviousness

Amazon contends that "MPEG-1 was implemented as a nod toward global motion" and that it contemplates "that motion vectors can be estimated based on previously decoded values—essentially, the motion information of previous pels and, by extension, previous segments of the video." As a result, according to Amazon, "the motion vector for a given segment could be predicted based on the motion vectors of neighboring segments (or macroblocks). Amazon Br.

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at 14. Amazon also argues that "by the relevant time frame, methods for determining motion vector prediction had evolved from using a single macroblock to using predictive information gleaned from 'multiple macroblocks' (or image segments) in JM-1 and H.263." *Id.* at 14. As a result, Amazon contends that the asserted claims are invalid as obvious.

Nokia contends that: (1) Amazon's obviousness theory is inconsistent with its expert's testimony, Nokia Reply at 13–16; (2) there is no evidence of suggestion or motivation to modify the teachings of MPEG-1, *id.* at 16–17; (3) Amazon's obviousness theory is not plausible, *id.* at 17–18; and (4) the "experts agree MPEG-1 does not disclose the Asserted Claims because it copies a motion vector for the current block from the prior block to the left," *id.* at 19–23.

The Staff argues that "MPEG-1 B-picture skip mode only discloses the use of a single image segment surrounding the macroblock in question" and thus "MPEG-1 always uses a zero-valued motion vector, which does not depend on the motion in image segments surrounding the macroblock in question" and that MPEG-1 "merely copies the macroblock data from the previous macroblock to the current macroblock." *Id.*

For the reasons discussed below, I agree with Nokia and the Staff that MPEG-1 itself does not on its own or in combination with one or both of H.263 and JM-1 render obvious the asserted claims.

MPEG-1 identifies four types of coded pictures:

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There are four types of coded picture that use different coding methods.

An **Intra-coded picture (I-picture)** is coded using information only from itself.

A **Predictive-coded picture (P-picture)** is a picture which is coded using motion compensated prediction from a past I-Picture or P-Picture.

A **Bidirectionally predictive-coded picture (B-picture)** is a picture which is coded using motion compensated prediction from a past and/or future I-Picture or P-Picture.

A **dc coded (D) picture** is coded using information only from itself. Of the DCT coefficients only the dc ones are present. The D-Pictures shall not be in a sequence containing any other picture types.

MPEG-1 at .0025.

Section 2.4.4.4 of MPEG-1 discloses that "[i]n B-pictures, the skipped macroblock is defined to have the same macroblock_type (forward, backward, or both motion vectors) as the prior macroblock, differential motion vectors equal to zero, and no DCT [discrete cosine transform, MPEG-1 at .0005] coefficients. In a B-picture, a skipped macroblock shall not follow an intra-coded macroblock." MPEG-1 at .0046–47. Dr. Orchard testified that this section means that for B-picture skipped macroblocks, "the differential motion vectors are equal to zero," that "the motion vector that's used is the motion vector from the block to the left with zero added to it," and therefore that "it's just the motion vector of the block to the left." Orchard Tr. at 1853:11–19 and MPEG-1 at .0046–47.

Dr. Acton agreed that MPEG-1 does not satisfy a construction of skip coding mode requiring multiple macroblocks, testifying that "it doesn't have the surrounding element" presumably because the single motion vector to the left does not "surround" the macroblock in question. Acton Tr. at 1393:20–23. In testimony elicited by Amazon and cited by Amazon in its briefing, Amazon's expert testified that he was not relying on MPEG-1 alone for his obviousness opinion but instead opined that "one of skill could take from JM1 or H.263 the multiple macroblock motion vector prediction and put it together with MPEG-1." Amazon Br. at 14, citing

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Acton Tr. at 1393:20–1394:6. To the extent Amazon argues obviousness alone based on MPEG-1, that argument is not supported by the testimony of its expert. It is also refuted by Nokia's expert. Orchard Tr. 1854:2–17 ("in the MPEG-1, there are not image segments" but rather "[t]here's just a single image segment" and "the thing that's supposed to depend, which is the association with each skipped coding block of either a zero non-active motion vector or a non-zero active motion vector, that's not depending on this"). The Staff also agrees with the experts on this point. Staff Br. at 37 ("MPEG-1 B-picture skip mode only discloses the use of a single image segment surrounding the macroblock in question" and thus "MPEG-1 always uses a zero-valued motion vector, which does not depend on the motion in image segments surrounding the macroblock in question"). The evidence does not support obviousness based on MPEG-1 alone.

Amazon contends that Dr. Orchard "admitted that the term 'analyzing' is absent from the claim limitation where the decision to assign a zero or non-zero motion vector is made" and that non-asserted claims recite "analytical steps, showing that the patentee made a conscious drafting choice when omitting them" and thus the '808 patent allegedly "distinguishes between claims requiring an analysis step and those that do not." Amazon Br. at 17–18. This is irrelevant to the construction of "skip coding mode," which does not require "analysis" of the motion in image segments. Dependent claim 26 narrows the scope of independent claim 1 by requiring an additional requirement for encoding a video sequence by "performing an analysis of motion information of the second segment and motion information of a third segment neighboring the first segment." Amazon contends that claim 26 thus shows that "the '808 patent explicitly distinguishes between claims requiring an analysis step and those that do not, and notably, the Asserted Claims do not require performing any analysis step." As noted, however, the construction does not require an "analysis step."

[redacted]

With respect to the combination of MPEG-1 with H.263 and (or perhaps, or) JM-1, Amazon contends "it would not only be obvious but *necessary* to replace MPEG-1's predictor, which uses a single macroblock, with H.263 and JM-1's predictors." Amazon Br. at 18. Amazon cites no support for the proposition that was *necessary* to replace MPEG-1's predictor and there is none. The testimony Amazon cites elsewhere does not support that it was *necessary* to replace MPEG-1's predictor. Amazon Br. at 18–19, *citing* Acton Tr. at 1362:8–1363:17 (describing H.263 and JM-1 as using multiple macroblocks); 1402:19–1403:3 ("So essentially one of skill would know, hey, MPEG-1 used one macroblock to the left. And now the standards for macroblock motion vector prediction are multiple macroblocks, like JM1 and H.263, 1998. I will do it that way"); and 1393:20–1394:16 ("And by the time we get to the filing of the '808, it's known from JM1 and H.263 that you could use multiple macroblocks. You could use three, four. And, essentially, what one could do is, instead of predicting from one macroblock, one could predict from several, because that's in the art"). Dr. Acton did not testify and there is no support in the record for the proposition that it was necessary to replace MPEG-1's predictors.

In addition to not providing any support for the proposition that it was necessary to replace MPEG-1's predictors, Amazon provides no support for a motivation to combine MPEG-1 with either or both of H.263 and JM-1. Instead, as demonstrated by the testimony in the immediately preceding paragraph, Dr. Acton's opinions are based on the theory that because the prior art discloses multiple macroblocks, it would be obvious to modify MPEG-1. Dr. Acton, however, provided no evidence supporting a motivation to combine. This is required and this failure is fatal to Amazon's argument. *Virtek Vision Int'l ULC v. Assembly Guidance Systems, Inc.*, 97 F.4th 882, 886 (Fed. Cir. 2024) (reversing PTAB holding of obviousness and stating that "[i]t does not suffice to meet the motivation to combine requirement to recognize that two alternative arrangements . . .

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were both known in the art."). The Federal Circuit has been clear that "obviousness concerns whether a skilled artisan not only *could have made* but *would have been motivated to make* the combinations or modifications of prior art to arrive at the claimed invention." *Id.* at 886–87 (emphases in original and citations omitted). As a result, "there must exist a motivation to combine various prior art references in order for a skilled artisan to make the claimed invention." *Id.* at 887. The required motivation was not provided by Amazon.

Instead, the evidence supports that one of skill considering H.263 or JM-1, would not "even consider it plausible to make such a substitution." Orchard Tr. at 1856:15–1858:19. MPEG-1's B-picture skip mode is used with B-pictures. *See, e.g.*, MPEG-1 at .54–55. Dr. Orchard pointed out that H.263 does not even "have B-pictures. It has PB frames that are coded together. And the motion vector used on skip macroblocks in the B-pictures of the PB frames uses the motion vector that's sent with the PB together. And so it's something totally different than this." Orchard Tr. at 1857:5–1858:19. In other words, those who drafted H.263, knowing about MPEG-1, decided to do something entirely different than what Dr. Acton suggests. Similarly, Dr. Orchard explained JM-1 "has B-pictures with B_skips, but the B_skips don't use neighboring motion – or macroblocks to supply a motion vector." *Id.* Those who worked on JM-1 thus also took a different approach than what Dr. Acton, without support, urges. Dr. Orchard's testimony on these points is credible and supports that there is no motivation to combine MPEG-1 with H.263 or JM-1. In addition to failing to provide a motivation to combine, the evidence supports that Dr. Acton's obviousness opinion with respect to the combination of MPEG-1 and H.263 and/or JM-1 is based on impermissible hindsight.

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The evidence does not support that MPEG-1 alone or in combination with one or both of H.263 and JM-1 renders obvious the asserted claims. Amazon has not shown by clear and convincing evidence that the asserted claims are anticipated or rendered obvious.

3. JVT-F100

Amazon contends that the asserted claims of the '808 patent are "invalid in view of the JVT's first draft of the H.264 standard in December of 2002, JVT-F100." Amazon Br. at 21–28. The non-provisional application leading to the '808 patent was filed on March 14, 2003 and was based on a provisional application filed on March 15, 2002. '808 patent at cover. Nokia and the Staff contend that JVT-F100 is not prior art because the asserted claims are entitled to the priority date of the provisional application. Nokia Reply at 25–28 and Staff Br. at 37–38 ("Dr. Orchard offered evidence that each limitation in the '808 Patent could be found in the provisional application" and that "Dr. Acton admitted that the '808 Provisional application provided support for at least one embodiment of the '808 Patent.") Amazon contends the opposite. Amazon Br. at 21–28. This is the entire issue: if the asserted claims are entitled to the provisional filing date, JVT-F100 is not prior art. If JVT-100 is prior art, the parties agree that it anticipates the asserted claims. Joint Stipulation at 1. ("The Parties agree that JVT-F100 discloses all limitations of the asserted claims, such that it would anticipate the asserted claims if JVT-F100 qualifies as prior art (which is disputed by the parties).")

To be entitled to claim priority to a provisional application, "the specification of the provisional must contain a written description of the invention … to enable an ordinarily skilled artisan to practice the invention claimed in the non-provisional application." *New Railhead Mfg., L.L.C. v. Vermeer Mfg. Co.*, 298 F.3d 1290, 1294 (Fed. Cir. 2002).

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Nokia presents two arguments: (1) the "threshold analysis" embodiment in the provisional application supports the claims; and (2) the "conditional analysis" embodiment in the provisional application supports the claims. Nokia Br. at 14–16 and Nokia Reply at 25–28.

As to the "threshold analysis" embodiment and paragraphs 34–37 of the provisional, Amazon contends that "the provisional described assigning a zero or non-zero motion vector using information from *multiple* macroblocks at the predictor" and that the "provisional's text disclosed nothing about assigning a zero or non-zero motion vector based on motion information from just *one* of *two* macroblocks at the predictor." RX-0010.0008 (¶¶ 34–37) ('808 provisional application)[12]; Amazon Br. at 22 and 23; and *see* Amazon Br. at 23–24 (addressing the "first preferred embodiment" and "multiple macroblocks at the predictor"). Amazon does not specifically explain why this means that the "threshold analysis" embodiment is not supported by the asserted claims. Amazon Br. at 22–25 and Nokia Replay at 25–26.

As to the "conditional analysis" embodiment and paragraph 24 of the provisional, Amazon contends that "paragraph 24 cannot provide support for the Asserted Claims, including the construed 'skip coding mode' under Nokia's interpretation" because "the last two sentences in paragraph 24 relate to 'coding modes,' not 'motion information,' which are distinct and separate concepts." Amazon Br. at 26.

[12] Nokia refers to the provisional application as CX-1806. Nokia Br. at 26. This is the same document as RX-0010.

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Paragraph 24 of the '808 provisional is reproduced below:

> **[0024]** The motion analysis in 'Analyze Surrounding Motion' block can be implemented in various ways. For example, continuance, velocity, or deviation of the surrounding motion can be included in the analysis. Also, the coding modes of the already processed Macroblocks can be included. For example, if there is one or more stationary neighboring Macroblocks, 'Non-Active Motion' can be declared.

RX-0010.0006.

Amazon disputes that paragraph 24 of the '808 provisional support the asserted claims because "the last two sentences in paragraph 24 relate to 'coding modes,' not 'motion information.'" Amazon Br. at 26, *citing* Orchard Tr. at 1879:15–17 and 1880:10–1881:5 as support for its argument that coding modes and motion information are different. Paragraph 24 describes the "motion analysis in 'Analyze Surrounding Motion' block can be implemented in various ways" and states that "if there is one or more stationary neighboring Macroblocks, 'Non-Active Motion' can be declared." RX-0010.0006. Amazon's position that this disclosure does not relate to "motion information" is contrary to the testimony of its expert. Instead, Dr. Acton's testimony supports that paragraph 24 discloses motion information. Acton Tr. at 1494:10–1495:13 (agreeing that "stationary" in paragraph 24 means "no motion" and agreeing that "if we swap in zero motion vector into that last sentence [of paragraph 24], what it's saying is, for example, if there is one or more neighboring macroblocks with a zero value of motion, non-active motion can be declared").

Dr. Acton also testified that Nokia's "Motion Copy (Mcopy)" approach is similar to paragraph 24. *Id.* at 1495:23–1497:16 and RX-1493.0001. At the hearing, Dr. Acton testified that "motion copy does not consider motion in surrounding macroblocks." *Id.* at 1490:7–21. In his expert report, however, Dr. Acton stated that that motion copy would "consider motion in

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surrounding macroblocks." Acton Tr. at 1490:25–1492:2. As a result of this inconsistency, I do not credit Dr. Acton's testimony that the provisional application does not support the asserted claims.

Amazon contends that the '808 non-provisional application added information that was not in the provisional. Amazon Br. at 23–25. Amazon cites no case law for the proposition that additional information in a non-provisional application means that the claims are not entitled to priority to a provisional. In addition, Dr. Orchard provided credible testimony that the provisional application supports the asserted claims. Staff Br. at 38 (detailing provisional support and identifying Orchard testimony) and Nokia Br. at 16. The evidence supports that the asserted claims are supported by the provisional application and that, therefore, JVT-F100 is not prior art to the '808 patent under 35 U.S.C. § 102(a). As a result, Amazon has not shown by clear and convincing evidence that the asserted claims of the '808 patent are anticipated by JVT-F100.

4. Secondary Considerations

"Objective indicia of nonobviousness must be considered in every case where present." *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1048 (Fed. Cir. 2016). Evidence of such indicia "may often be the most probative and cogent evidence in the record," *id.* at 1052, *quoting Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1538 (Fed. Cir. 1983), and "guard against slipping into use of hindsight." *Id.*, *quoting Graham*, 383 U.S. at 36. Such evidence can include "commercial success enjoyed by devices practicing the patented invention, industry praise for the patented invention, copying by others, and the existence of a long-felt but unsatisfied need for the invention." *Id.*

To accord substantial weight to secondary considerations, the evidence must have a nexus to the claims. That is, there must be a legally and factually sufficient connection between the

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evidence and the patented invention. The patentee bears the burden of showing that a nexus exists. *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019). "A showing of nexus can be made in two ways: (1) via a presumption of nexus, or (2) via a showing that the evidence [of secondary considerations] is a direct result of the unique characteristics of the claimed invention." *Volvo Penta of the Americas, LLC v. Brunswick Corp.*, 81 F.4th 1202, 1210 (Fed. Cir. 2023).

Nokia does not assert that there should be a presumption of nexus but contends that the secondary consideration of industry praise supports non-obviousness. Nokia Reply at 29–30. Nokia contends that one "example of industry praise is the adoption of JVT-C027 into the H.264 Standard as the skip coding mode" and that "[t]he JVT considered other proposals and decided Nokia's contribution was the best choice." Nokia Reply at 29. Nokia contends that "Nokia's redefined skip mode was highlighted among ten improvements in an 'Overview of the H.264/AVC Video Coding Standard from JVT co-chairs and praised as enhancing coding efficiency" and that "[t]he paper 'A Novel Approach to Skip Mode Decision for H.264' states that skip mode is one of the most frequently used coding modes in H.264." *Id.* at 30. Amazon contends that Nokia failed to establish the required nexus to the '808 patent." Amazon Reply at 29. The Staff contends that "there is no evidence showing that the widespread use and adoption of the H.264 standard, or the success of any of the products that practice the H.264 standard, is because of the '808 Patent," that the evidence "instead showed that there are many other aspects of the products that may contribute to their success," and that although Dr. Orchard pointed to "two printed articles that purportedly praise the asserted patent, there was no actual 'praise' in these articles, and instead, they identified and described many different features of H.264." Staff Br. at 38–39.

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The evidence supports that there was industry praise regarding Nokia's skip coding mode as an improvement in coding modes. Nonetheless, I agree with the Staff that there is sparse evidence supporting the required nexus. *Apple, Inc. v. Samsung Elecs. Co., Ltd.*, 839 F. 3d 1034, 1068 (Fed. Cir. 2016) (holding that the patentee must establish a nexus between the evidence of secondary considerations and merits of the claimed invention). I agree with the Staff that Nokia has not offered sufficient evidence showing that the widespread use and adoption of the H.264 standard, or the success of any of the products that practice the H.264 standard, is because of the '808 patent. As a result, secondary considerations do not support non-obviousness.

VII. THE '134 PATENT

A. Claim Construction

During claim construction, the parties did not contend that any claim terms required construction. Corrected Order No. 38. The parties now dispute the meaning of "an indication informing an intentional discontinuity," recited in element 9[b]. Nokia Br. at 54–65; Nokia Reply at 56–58; Amazon Reply at 31–39; Staff Br. at 40–45; and Staff Reply at 7–8. That term is addressed below in the context of infringement and technical domestic industry.

B. Infringement and Technical Domestic Industry

Nokia asserts infringement of and technical domestic industry with respect to claims 9, 11, and 13–15. Nokia Br. at 1 and 65–85 (infringement) and 86 (technical domestic industry). Amazon and the Staff disagree. Amazon Reply at 31–50 (infringement) and 50–52 (technical domestic industry) and Staff Br. at 40–45 (infringement) and 46 (technical domestic industry). The parties agree that infringement and technical domestic industry can be considered together. Nokia Br. at 86; Amazon Reply at 50–51; and Staff Br. at 46. As a result, except as indicated, infringement and technical domestic industry are addressed together.

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1. Domestic Industry Source Code

As an initial matter, Amazon contends that Nokia did not demonstrate that the identified domestic industry products contain the source code its expert analyzed. Amazon Reply at 51–52.

As to Microsoft's Xbox domestic industry products, Amazon questions whether the AMD source code Dr. Kia relied on "is the version actually loaded onto the Xbox" domestic industry products. *Id.* at 51. Nokia contends that "Dr. Kia specifically reviewed the code identified by AMD for the Xbox products and confirmed it operated the same way as the other AMD code and practiced the '134 Patent," Nokia Br. at 86, *citing* Kia Tr. at 697:12–700:22. Nokia also points out that "Dr. Acton admitted that he did not 'really know that much about" the AMD chipset on the Xbox and that he is "[p]robably not the best person' to answer questions" about it. *Id.*, *citing* Acton Tr. 1460:7–1461:9. The evidence supports that the analyzed code is on the Xbox domestic industry products. Dr. Acton's testimony does not support otherwise. Acton Tr. at 1460:18–21 (Q. Because you know that, in fact, there is a customized AMD chipset in the Xbox, right? A. I don't really know that much about it, to be honest.") and 1461:5–9 ("Q. You would agree with me, sir, that if I want to know whether or not the Xbox has a customized AMD chipset, you're not the person that can really answer that question for me, right? A. Probably not the best person, no.").

As to the Samsung domestic industry products, Amazon likewise questions whether the Android OS source code that Dr. Kia relied on "is actually used on the Samsung Domestic Industry Products." Amazon Reply at 52. Nokia contends that "Dr. Kia reviewed the code identified by Samsung's own website as being on the DI products and confirmed it operated the same way as the other Android code and practiced the '134 Patent." Nokia Br. at 86, *citing* Kia Tr. at 700:24–702:25. Nokia further contends that "[a]lthough Dr. Acton opined that 'Samsung may modify Android when they use it,' he admitted there was no evidence of any such modifications." Nokia

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Br. at 86–87, *citing* Acton Tr. at 1341:3–25 and 1458:8–1460:6. The evidence supports that the analyzed code is on the Samsung domestic industry products. Dr. Acton's testimony does not support otherwise. Acton Tr. at 1459:1–5 ("Q. So your testimony here is really that theoretically somebody might have changed it, but we have absolutely no evidence or suggestion that actually happened, right? A. I don't have specific evidence.") and 1459:18–1460:6 ("Question: Do all of the versions of the public Android operating system that you reviewed operate the same way with respect to the accused features of the for the '134 patent? Answer: …I didn't see any marked differences in the way that they operate, no.").

The evidence supports that the identified code is on the domestic industry products.

2. Claim 9

Nokia and Amazon stipulated that elements 9[a] and 9[d] "are uncontested as being infringed by the accused products and [met] by the domestic industry products." Joint Stipulation at 2–3. The disputed limitations are addressed below.

a) Element 9[b]

Element 9[b] recites "decode from the compressed video sequence an indication informing an intentional discontinuity of numbering the image frames." '134 patent at claim 9. Though they did not during claim construction, the parties now dispute the construction of "informing an intentional discontinuity" in this claim element. Nokia contends that the claimed indication signals "the decoder to treat all discontinuities as intentional." Nokia Br. at 56. Amazon contends that "the claimed indication must inform that discontinuities are intentional." Amazon Reply at 32. The Staff agrees with Amazon. Staff Br. at 43. For the reasons discussed below, I agree with Amazon and the Staff.

As an initial matter, the evidence supports that there may be two types of discontinuities,

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intentional and unintentional, the first being inserted on purpose and the second not. Kia Tr. at 595:2–6. Considering the claim language, element 9[b] recites that the video decoder is configured to "decode from the compressed video sequence an indication informing an intentional discontinuity of numbering the image frames." The plain meaning of "indication informing an intentional discontinuity" requires that the indication provide specific information – an indication of an intentional discontinuity. An indication informing any discontinuity, intentional or unintentional, does not inform an intentional discontinuity. By analogy, in a family with a mother and a father, an indication informing that a parent is coming to dinner is not an indication informing that the father is coming for dinner; he may, he may not. Likewise, an indication to "treat" a discontinuity as intentional, under Nokia's proposed construction, does not inform that the discontinuity is intentional, which is what is required by the claim language. Again, by analogy, an indication to treat a parent coming to dinner as a father does not mean the father will join.

Nokia contends that Amazon's construction contradicts the patent specification, arguing that "both experts agree the specification describes a preferred embodiment where the encoder inserts the claimed indication into the bitstream without knowing whether the streaming server will later intentionally drop frames." Nokia Br. at 56–58. Nokia, however, does not point to anything in the specification drawing a distinction between an encoder and a streaming server. *Id.* and Amazon Reply at 37 ("no such preferred embodiment exists"). And regardless of any such distinction, the specification discloses that "it is essential that the encoder is capable to inform the decoder that the discontinuities in the image numbering of the transmitted image are intentional." '134 patent at 20:30–33; 4:41–43 ("[p]referably, said indication informs that at least one discontinuity in the numbering of the image frames in the video sequence are intentional");

[redacted]

and Abstract (same). The specification thus supports that the claimed indication must inform that the discontinuity is intentional, consistent with Amazon and the Staff's construction.

Nokia contends that the prosecution history supports its claim construction. Nokia Br. at 58–64. Amazon and the Staff contend that it supports their construction. Amazon Reply at 31–39; Staff Br. at 43; and Staff Reply at 7–8.

Amazon contends that Nokia's interpretation is "an improper effort to recapture patent scope disavowed" during prosecution and that the '134 patent claims are strictly limited to an "indication informing an intentional discontinuity." Amazon Reply at 31. The Staff agrees with Amazon and contends that "Nokia's interpretation captures claim scope that was abandoned during prosecution." Staff Br. at 43 and Staff Reply at 7–8.

Amazon identifies Nokia's claim amendments related to the claimed indication. Amazon Br. at 33–34. In particular, application claim 10, which issued as patent claim 9, early on recited "decode from the compressed video sequence an indication related to at least one discontinuity." JX-0002.1815–16. Nokia amended this language in response to a prior art rejection to recite "decode from the compressed video sequence an indication related to <u>an intentional</u> discontinuity." *Id.* at .2095–96. In response to continued prior art rejections, Nokia amended the term again to delete that the indication was "related to" an intentional discontinuity and to recite "decode from the compressed video sequence an indication <u>informing an intentional discontinuity</u>." *Id.* at .2430–31. Nokia's claim amendments unquestionably changed the scope of the claim, requiring that the indication "inform" a specific thing—an intentional discontinuity as opposed to relating to at least one discontinuity or relating to an intentional discontinuity, as previously claimed. Nokia's claim amendments unambiguously and unmistakably confirm that the indication must inform that the discontinuity is intentional. It is not enough, as Nokia contends, that the decoder treat all

[redacted]

discontinuities as intentional—it must inform that they are. *Graham*, 383 U.S. at 33 ("[C]laims that have been narrowed in order to obtain the issuance of a patent by distinguishing prior art cannot be sustained to cover that which was previously by limitation eliminated from a patent.").

The intrinsic evidence, the language of the claims, the specification, and the prosecution history, all support that the claimed indication must inform that discontinuities are intentional, as Amazon contends.

Nokia contends that the standardization history supports its claim construction, arguing that "[n]owhere did the proposal require the indication accurately identify discontinuities frame-by-frame, which Dr. Kia explained would not make sense in view of the mechanism to later correct for unintentional errors." Nokia Br. at 64. The standardization history is extrinsic evidence, which the Federal Circuit has said may be useful, but is less reliable than intrinsic evidence. *Phillips*, 415 F.3d at 1318. Further, where the intrinsic record unambiguously describes the scope of the patented invention, reliance on extrinsic evidence is improper. *See Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1308 (Fed. Cir. 1999), *citing Vitronics*, 90 F.3d at 1583. That is the case here. The intrinsic record unambiguously supports that the claimed indication must inform that a discontinuity is intentional. The standardization history, even if it supports otherwise, is irrelevant.

Considering this construction, the evidence supports that the accused and domestic industry products do not meet element 9[b]. The H.264 standard does not provide that products "decode[s] from the compressed video sequence an indication informing an intentional discontinuity of numbering of the image frames," as recited in element 9[b], which must inform that a discontinuity is intentional. The "gaps_in_frame_num_value_allowed_flag" does not inform an intentional discontinuity, but instead is set whether there is any discontinuity, not just an intentional discontinuity. Nokia's expert, Dr. Kia, agreed that the gaps flag does not inform whether a

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discontinuity is intentional or unintentional. Kia Tr. at 718:23–719:1 ("the gaps flag does not inform the decoder which discontinuity is intentional or unintentional"). Dr. Kia also testified that if the gaps_flag is set to 1, there may or may not discontinuities. *Id.* at 719:3–8 (the gaps flag set to 1 "just says there could be discontinuities," "there could be discontinuities or there could not be discontinuities"). In other words, since the encoder does not know whether or not there is an intentional discontinuity by the setting of the gaps flag, it does not inform an intentional discontinuity, as required by the claim. The evidence thus supports that the accused and domestic industry products do not meet element 9[b].

b) Element 9[c]

Element 9[c] recites "configure, in response to the indication, the buffer memory to provide a number of image frames corresponding to at least one discontinuity in the numbering of the image frames." Nokia contends that the accused and domestic industry products meet this claim element because they comply with the H.264 standard and as demonstrated by the source code, Nokia Br. at 69–78 (accused products) and 86–87 (domestic industry products).

Nokia contends that the accused and domestic industry products "include an H.264-compliant decoder that configures, in response to the gaps flag set to 1, the decoded picture buffer (DPB) (*i.e.*, buffer memory) to provide a set of values of frame_num for "non-existing" frames corresponding to at least one discontinuity in frame_num values," *id.* at 70, and that "[t]he source code also shows that the Accused Products operate in accordance with the H.264 Standard and infringe because all the Accused Products configure" as required by element 9[c], *id.* at 72. The Staff partially agrees with Nokia and contends that "[a]side from the non-infringement issue raised above with element [9[b]], the evidence showed that the other elements of this limitation are met" and that "[i]f the standard did provide for the claimed indication, the standard provides that the

[redacted]

decoder configures the buffer to provide frames for the number of skipped frames." Staff Br. at 43. Amazon disagrees with Nokia and the Staff and contends that "H.264 does not require a decoder to condition insertion of filler frames on the value of gaps flag, and, therefore, does not infringe" element 9[c]'s "configure, in response to the indication" requirement. Amazon Reply at 40.

I agree with Nokia and the Staff that the H.264 standard requires that the decoder configure the buffer to provide frames for the number of skipped frames which meets the requirements of element 9[c]. *See* Nokia Br. at 69–78 and Staff Br. at 43.

3. Dependent Claims

Nokia asserts that the accused and domestic industry products meet dependent claims 11 and 13–15. Nokia Br. at 79–83. Because each of these claims depend directly or indirectly from independent claim 9, they are not met for the same reasons.

4. Indirect Infringement

Because the accused and domestic industry products do not directly infringe, there is no indirect infringement.

C. Validity

1. Combination of TML-9 and H.262

Amazon contends that asserted claims 9, 11, and 13–15 are obvious in view of the combination of TML-9 (RX-0564) and H.262 (RX-0578). Amazon Br. at 31–42. In particular, Amazon contends that if "Nokia's interpretation [of 'indication informing an intentional discontinuity'] is adopted, every asserted claim from the '134 patent is obvious in view of TML-9 and H.262." *Id.* at 32. Amazon does not contend that the asserted claims are obvious considering its interpretation, which, as explained above, was adopted. There is no dispute that TML-9, dated

[redacted]

December 21, 2001, and the H.262 standard, dated February 2000, are prior art under 35 U.S.C. § 102(a).

TML-9 is the draft H.264 standard immediately before Nokia's proposal (JVT-B042), which became the '134 patent. Kia Tr. at 1899:10–19 and Acton Tr. at 1461:18–22. The H.262 standard is dated February 2000. H.262. The evidence supports that when Nokia made its JVT-B042 proposal, those of skill in the art were familiar with H.262. Acton Tr. 1461:23–1462:5.

In their Joint Stipulation, the Nokia and Amazon agreed that elements 9[a] and 9[d] "are uncontested as being rendered obvious by TML-9/H.262" and that claim 11 rises and falls with claim 9." Joint Stipulation at 2. The disputed limitations are addressed below.

a) Element 9[b]

Element 9[b] recites "decode from the compressed video sequence an indication informing an intentional discontinuity of numbering the image frames." Nokia contends that "under any offered claim construction, the combination of TML-9 and H.262 fails to render obvious this element because (i) neither reference discloses the concept of intentional discontinuities at all, (ii) the alleged indication is never received by the decoder in the asserted combination, and (iii) the alleged indication does not inform an intentional discontinuity." Nokia Reply at 37. The Staff agrees with Nokia and contends that "[t]he evidence did not clearly and convincingly show that the combination of TML-9 and H.262 renders obvious any of the '134 Asserted Claims at least because it does not suggest 'an intentional discontinuity of numbering in image frames.'" Staff Br. at 47. I agree with Nokia and the Staff that the combination of TML-9 and H.262 does not render obvious element 9[b] because neither reference discloses the concept of intentional discontinuities.

The evidence supports that TML-9 "corrects for accidentally lost pictures only" and does not consider the "possibility of intentional sub-sequence disposal." As a result, TML-9 does not

[redacted]

address intentional discontinuities Kia Tr. at 1899:20–1900:5 and 1901:22–24 (TML-9 does not include any discussion of "an indication informing an intentional discontinuity"); CX-0602.0005–6 ((JVT-B042); and CX-0603.0006 ((JVT-B042r1). Because TML-9 had no concept of intentional discontinuities, TML-9 uses error concealment for all discontinuities, which wastes resources if the discontinuities are intentional. Kia Tr. at 1902:3–17 ("if the discontinuities were intentional, the decoder would take extra resources to make that error concealment image by copying it from a neighboring, or even the retransmission that would consume a lot of resources, which goes against intentional discontinuities"); RX-0564.0039; CX-0602.0005–6; and CX-0603.0006–7. Further, TML-9 teaches the decoder to automatically infer an unintentional discontinuity. Kia Tr. at 1901:25–1902:2 and RX-0564.0037. Dr. Acton agreed that TML-9 does not disclose intentional discontinuities and confirmed that his opinion was only based on Nokia's construction. Acton Tr. at 1464:4–12.

Like TML-9, H.262 does not consider intentional discontinuities due to intentionally dropped frames. Kia. Tr. at 1907:19–24 (H.262 does not disclose any situation "where there can be an intentional discontinuity of frame numbering"). Dr. Acton agreed and confirmed that his opinion was only based on Nokia's construction. Acton Tr. at 1464:4–12. And like TML-9, H.262 treated all discontinuities as unintentional and performed the same error concealment procedures as TML-9. Kia Tr. 1908:5–18 and Acton Tr. at 1464:13–23. With respect to temporal scalability, H.262 explains "[i]n scalable video coding, it is assumed that given a coded bitstream, decoders of various complexities can decode and display appropriate reproductions of coded video." H.262 at vi. This means that the decoder decides what to decode and what not to decode. There is no indication of an intentional discontinuity because the encoder does not skip any frames. Kia Tr. at 1904:19–23.

[redacted]

In the combination of TML-9 and H.262, enhancement layer frames are either dropped at the encoder (and never given a number) or they are dropped at the decoder (after the decoder receives all the frames). In either case, the evidence supports that there is no intentional discontinuity in frame numbering received by the decoder, and therefore no decoding an indication informing an intentional discontinuity, as element 9[b] requires. Kia Tr. at 1903:19–1904:11, 1905:14–1906:1, and 1907:21–24.

Amazon contends that Nokia did not challenge the motivation to combine TML-9 and H.262 because Dr. Kia's testimony on validity was "focused exclusively on whether the resulting combination made the Asserted Claims obvious" and because he did not specifically "challenge Dr. Acton's conclusion that a POSITA would be motivated to combine elements of H.262 with TML-9." Amazon contends that for these reasons, "Dr. Acton's testimony stands unrebutted and motivation to combine TML-9 and H.262 is established." Amazon Br. at 32. Whether or not Dr. Kia specifically challenged Dr. Acton's testimony is not determinative on whether motivation to combine TML-9 and H.262 is established. In any event, for the reasons discussed above, the evidence supports that neither TML-9 nor H.262 discloses intentional discontinuities and thus their combination does not either.

Amazon contends that streaming servers were known and that intentionally dropping frames was "a necessary feature of prior-art temporal scaling." Amazon Br. at 34. However, both experts agree that neither TML-9 nor H.262 discloses a streaming server dropping frames. Acton Tr. at 1463:25–1464:12 and Kia Tr. at 1904:18–22 and 1907:19–20. Dr. Acton relies on H.262 for temporal scaling details, and it is not disputed that H.262 teaches only dropping frames at the decoder after the bitstream is received and does not suggest intentional discontinuities in the bitstream received by the decoder. Acton Tr. at 1344:15–1345:9 and Kia Tr. at 1904:23–1907:6

[redacted]

and 1097:21–24. It is therefore irrelevant whether streaming servers were generally known. There is no evidence that one of skill would have been motivated to add a streaming server to create intentional discontinuities, or to include an indication informing the decoder of such discontinuities. Amazon's contrary argument is based on impermissible hindsight.

Amazon contends that TML-9 must have intentional discontinuities because JVT-B042 did not change the definition of "Picture Number." Amazon Br. at 34–35. The evidence supports that it was the inventor of the '134 patent who recognized that TML-9 did not consider intentional discontinuities due to frames dropped at a streaming server using temporal scalability. Kia Tr. at 1904:15–22 and CX-0603.0002 ("streaming servers monitor the network conditions and adjust the transmitted bitstream accordingly"). The inventor had no reason to alter the definition of how the encoder would assign picture numbers in the first place.

Amazon has not shown that element 9[b] is obvious based on the combination of H.262 and TML-9.

b) Element 9[c]

Element 9[c] recites "configure, in response to the indication, the buffer memory to provide a number of image frames corresponding to at least one discontinuity in the numbering of the image frames."

Because there is no indication informing an intentional discontinuity of frame numbering in TML-9 or H.262, there cannot be any configuring in response to the indication. Kia Tr. at 1912:24–1913:4. Further, neither TML-9 nor H.262 discloses configuring the buffer memory based on receiving the alleged indication in Dr. Acton's combination—*i.e.*, Dr. Acton does not opine that the scalable_mode parameter actually triggers configuring the buffer memory to provide a number of image frames, as element 9[c] requires. Kia Tr. at 1913:5–14; RX-0564.0037; and

[redacted]

RX-0578.0172. The buffer memory is adjusted based on "lost" frames only. *Id.* Neither TML-9 nor H.262 teaches treating any discontinuities as intentional when configuring the buffer. *Id.* Rather, both references teach using error concealment for "lost" pictures, *i.e.*, unintentional discontinuities. RX-0564.0079, .0039 and RX-0578.0172.

Amazon relies on Dr. Acton's opinion that it was obvious to "configure the buffer memory in response to that scalable mode indication," but he provides no reason why a person of skill would have been motivated to modify either TML-9 or H.262, which both teach that the decoder receives all frames and therefore would have no need to configure the buffer memory to handle intentional gaps because frames are dropped by the decoder as part of the decoding process. Acton Tr. at 1351:4–17. In support of its argument Amazon misquotes Dr. Kia. Amazon Br. at 37–38. Dr. Kia never testified that it would be "necessary" to configure the buffer memory of the prior art for intentional gaps, nor did he discuss any buffer configuration in connection with the scalable_mode parameter. Kia Tr. at 1934:17–20 ("Q. And it doesn't matter whether that gap was intentionally caused or accidentally caused, correct? I do not agree with that. TML-9 only considers unintentional gaps") and 1939:4–7 ("Q. Okay. Can we also agree that when the decoder shifts picture indices, it is configuring the buffering using memory indications? A. No, I cannot agree to that, no.").

Amazon contends that TML-9 discloses "shift[ing] the picture indices in the buffer to ensure that the correct reference frames are used" and "inserting error concealed pictures into the places in the buffer that the missing pictures would have occupied." Amazon Br. at 36–38; RX-0564.0079 and .0039. However, Amazon's argument that it would have been obvious to use error concealment when temporal scaling is indicated merely highlights the differences between TML-9 and the '134 patent. In the '134 patent, filler frames are used instead of error-concealed frames

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to avoid wasting resources when gaps are intentional. TML-9 treats discontinuities as unintentional losses, and thus fills the buffer with actual picture data using error concealment. RX-0564.0079, .0039; RDX-0012C.0063; Acton Tr. at 1350:12–14 and 1354:5–19.

Amazon has not shown that element 9[c] is rendered obvious based on the combination of TML-9 and H.262.

Amazon has not shown by clear and convincing evidence that claim 9 is rendered obvious by the combination of TML-9 and H.262.

c) Dependent Claims

Because independent claim 9 is not obvious in view of the prior art, dependent claims 11 and 13–15 are not obvious for the same reasons.

2. Secondary Considerations

Nokia does not address secondary considerations for the '134 patent, Nokia Br. at 30–56, which Amazon and the Staff acknowledge. Amazon Reply at 42 ("Nokia and its experts did not address secondary considerations for the '134 patent"); and Staff Br. at 48 ("Nokia did not offer evidence of secondary considerations of non-obviousness for the '134 Patent at the evidentiary hearing"). As a result, I conclude that there are no secondary considerations supporting non-obviousness.

VIII. ECONOMIC PRONG

Section 337(a)(3) sets forth the following criteria for determining the existence of a domestic industry:

> (3) For purposes of paragraph (2), an industry in the United States shall be considered to exist if there is in the United States, with respect to the articles protected by the patent, copyright, trademark, mask work, or design concerned --
>
> (A) significant investment in plant and equipment;

[redacted]

(B) significant employment of labor or capital; or

(C) substantial investment in its exploitation, including engineering, research and development, or licensing.

19 U.S.C. §1337(a)(3).

Because the statutory criteria are listed in the disjunctive, satisfaction of any one of them is sufficient to meet the economic prong of the domestic industry requirement. *See Certain Variable Speed Wind Turbines and Components Thereof*, Inv. No. 337-TA-376, USITC Publ'n No. 3003, Comm'n Op. at 15 (Nov. 1996).

Nokia contends that it has satisfied the economic prong of the domestic industry requirement because its licensees Microsoft and Samsung have substantial investments in plant and equipment under section 337(a)(3)(A) and in labor and capital under section 337(a)(3)(B). Nokia Br. at 87–106. Amazon disagrees. Amazon Reply at 52–73. The Staff agrees with Nokia. Staff Br. at 48–64 and Staff Reply at 8–12.

A. Articles Protected by the Patents

Amazon contends that Nokia fails to show that the domestic industry investments were made "with respect to the articles protected by" the asserted patents and that the chipsets and Android operating system used in video encoding and decoding "are the articles to consider when determining domestic industry investments, not the downstream products." Amazon Reply at 55, *citing* 19 U.S.C. § 1337(a)(3). Nokia disagrees, contending, among other things, that the scope of this investigation "is identified by the Commission as 'laptop computers, desktop computers, tablet computers and modules thereof." Amazon Br. at 89–90, *citing* Notice of Investigation. The Staff contends that the domestic industry products are the articles to consider when assessing economic domestic industry. Staff Reply at 8–10.

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A domestic industry "extends only to articles which come within the claims of the patent relied on." *Schaper Mfg. Co. v. Int'l Trade Comm'n*, 717 F.2d 1368, 1371 (Fed. Cir. 1983). It cannot be disputed that video-capable end-user electronic devices, including the Samsung Galaxy smartphone, Microsoft Surface computer, and Microsoft Xbox gaming device, are the devices that are alleged to be covered by the asserted claims.

The asserted patents disclose the importance of, and in the '808 patent claim, the devices in which encoding and decoding take place. The '808 patent states that the "invention relates generally to communications systems and more particularly to motion compensation in video coding." '808 patent at 1:9–11. The patent recognizes that digital video signals are received from "a camera or other video source" and the encoded video signals are transmitted to a remote receiving terminal. *Id.* at 3:61–63 and 4:10–12. The '808 patent shows in Fig. 10 "a schematic block diagram of a multimedia communications terminal in which the method according to the invention may be implemented." *Id.* at 15:52–55 and *See id.* at 21:63–24:24 (describing terminal devices "which may be adapted to operate in accordance with the present invention"). Asserted claims 21 and 22 specifically recite a "multimedia terminal," comprising an encoder and a decoder, respectively.

The '134 patent likewise discloses the importance of the device in which the claimed decoder is included, stating that its "invention" "provides a preferred means for carrying out multimedia data traffic shaping in a streaming server comprising information about the different sub-sequences of a video sequence: their average bit rate, location in relation to the entire video sequence, duration and their interdependencies regarding the layers. The streaming server also determines the maximum value of the bandwidth available for the data transfer and/or the decoding rate of the terminal device." '134 patent at 18:54–61. The patent also discloses that the "receiving

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terminal device can control the decoding" and that an "essential aspect" "of the invention is that the encoder and decoder are positioned at least so that the encoder is operationally connected to the streaming server and the decoder is operationally connected to the receiving terminal device." *Id.* at 19:52–53 and 22:7–11.

Consistent with the patents' disclosures, the accused and domestic industry products have, in this investigation, been consistently identified as the overall devices, not a chipset or operating system. CDX-0004C.14; Orchard Tr. at 471:7–472:2 (identifying the accused and domestic industry products with respect to the '808 patent as Amazon "Fire Tablets, cameras, smart TVs, and streaming devices" and "Microsoft's Surface computers, and Microsoft's Xbox, and Samsung Galaxy series of phones") and CDX-0004C.46–47; Kia Tr. at 614:4–8 (identifying the accused products as to the '134 patent as "the Amazon products such as Fire TV, Fire Tablet, cubes, [and] Fire sticks") and CDX-0005C.28 and 34; Kia Tr. at 697:14–18 (identifying the domestic industry products as to the '134 patent as "the Xbox and Surface products from Microsoft, and it's the Galaxy Smartphones from Samsung") and CDX-0005C.74–75; and Acton Tr. at 1410:3–10 and RDX-12C.140 (identifying the Amazon accused products as the Amazon Echo, Fire, Fire TV, and Fire Stick).

The evidence supports that the domestic industry products "are the articles to consider when determining domestic industry investments, not the downstream products." 19 U.S.C. § 1337(a)(3).

B. Realities of the Marketplace

Amazon contends that a "three-part test determines whether the domestic industry extends beyond the patent-practicing articles," namely "whether the patented technology is sold as a separate entity or article of commerce; whether it is an essential component of the downstream

[redacted]

product; and whether the domestic industry activities have a direct relationship to exploitation of the patented technology." Amazon Br. at 55, *citing Certain Magnetic Tape Cartridges and Components Thereof*, Inv. No. 337-TA-1058, Comm'n Op. at 48 (Apr. 9, 2019) (EDIS Doc. ID 672595). Amazon contends that under that test, the patent practicing articles are the chipsets and operating systems in the domestic industry products such that only activities as to those chipsets and operating systems should be considered when assessing economic domestic industry. Amazon Br. at 55–64.

To the extent that the patent-practicing article is determined to be the chipset or operating system of the domestic industry products, the three factors identified in *Magnetic Tape Cartridges* are considered below.

1. Separate Entity or Article of Commerce

Amazon contends the first factor, whether the patented technology is sold as a separate entity or article of commerce, supports its position. Amazon Reply at 56–59. Nokia and the Staff disagree. Nokia Br. at 91–93; Staff Br. at 51–52; and Staff Reply at 9.

The evidence supports that the certain of the chipsets, excluding those in the Xbox, as addressed below, can be and are provided as separate articles to be integrated into non-domestic industry products. *See* Amazon Br. at 57–59. Nokia and the Staff are correct, however, that all of the domestic industry products are sold to consumers with chipsets or the Android operating system integrated into them. The domestic industry products are essential to the actual use of the chipsets and operating system because the only way to view encoded/decoded video is through the domestic industry products. Nokia Br. at 91–92; Staff Br. at 51–52; and Herrington Tr. at 329:14–21 (the consumers of the domestic industry products, "the Xbox, the Galaxy, the Surface," are

[redacted]

"people that are wanting that device to do, at a minimum, video streaming"). The chipsets and operating system can only function when integrated into a computer or other electronic device.

In addition, when assessing the "realities of the marketplace," the actual marketplace must be considered. The marketplace here is for the video capable electronic devices that have chipsets or an operating system integrated in them. Herrington Tr. at 329:14–21. In similar circumstances, "the proper relevant domestic industry" has been determined to be the devices and not the components integrated into those devices because the components, as here, were "sold in commerce only for the purpose of inclusion" into the electronic devices. *Certain LTE- and 3G-Compliant Cellular Communications Devices*, Inv. No. 337-TA-1138, Initial Determination at 146 (Feb. 18, 2020) (EDIS Doc. ID 704424); *see also Certain Light-Emitting Diode Products, Systems, and Components Thereof*, Inv. No. 337-TA-1368, Initial Determination at 118 (Jun. 26, 2020) (EDIS Doc. ID 715559) ("the realities of the marketplace do not constrain the relevant domestic industry to LED packages used in luminaires; the luminaries themselves are also a material part of the industry"); and *compare*, *Certain Video Game Systems and Wireless Controller and Components Thereof*, Inv. No. 337-TA-770, Comm'n Op. at 68 (Oct. 18, 2013) (EDIS Doc. ID 520573) (the complainant "has not provided evidence that the 'realities of the marketplace' require an elaborate amusement park attraction in order to use or sell its toy magic wand product").

As for the chipsets in the Microsoft Xbox domestic industry product, the evidence supports that those chipsets are custom and exclusive for Xbox, not available for sale separately, and essential for the operation of Xbox. Herrington Tr. at 331:16–333:10 ("the Xbox uses a custom GPU from AMD" that is not sold to anyone else); Kia Tr. at 699:1–700:22 ("the AMD declaration in CX-2924 says that the chip on the Xbox is a custom chip"); CX-2924C at 7; Mody Tr. at 1278:19–25 (admitting that "something" in the Xbox chipset is customized); Acton Tr. at 1460:14–

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17 (agreeing that there is a "customized AMD chipset in the Microsoft Xbox domestic industry product"); and CX-4648 (website, describing the "heart" of Xbox as the custom AMD chipset).

The evidence also supports that Android operating system for the Samsung Galaxy domestic industry products is software that is provided specifically for the Galaxy phones. Herrington Tr. at 356:1–25 ([redacted]); Kia Tr. at 701:21–703:9; CX-5879C (Sheppard Dep. Tr.) at 26:18–27:3 ([redacted]); CX-4574C (Sheppard Decl.) at ¶ 18; and Acton Tr. at 1341:3–12.

Amazon's arguments for this factor are not persuasive.

2. Essential Component

Amazon contends that the second factor, whether the patent-practicing article is an essential component of the downstream product, supports its position. Amazon Reply at 60–61. Nokia and the Staff disagree and contend that the chipsets and operating system are essential components to the domestic industry products. Nokia Br. at 93; Staff Br. at 52; and Staff Reply at 9–10.

As an initial matter, Amazon states that "[a]lthough the second factor is characterized as whether the patent-practicing article is essential to the downstream product, decisions on this factor require an exclusive operational relationship between the patent-practicing article and the downstream product." Amazon Reply at 60. Amazon, however, cites no such decisions. *Id.*

[redacted]

The evidence supports that the chipsets and operating system, which Amazon contends are the patent-practicing articles, are essential components to the domestic industry products. Those products are tablets, phones, and the Xbox game system, which would not work without the chipsets and operating system. Herrington Tr. at 331:7–10 (the domestic industry products would not function as intended without the chipsets and operating system). The evidence also supports that the ability to encode and decode H.264 video is essential for the expectations of consumers who purchase the domestic industry products. *Id.* at 332:28–333:23. In *Magnetic Tape Cartridges*, the Commission held that investments in non-patented tape drives were properly considered despite the patent only relating to the tape because "the tape drive is necessary to bring the patented technology to the consumer market" not because "there was an exclusive operational relationship between the patent-practicing article and the downstream product" as argued by Amazon. *Magnetic Tape Cartridges*, Comm'n Op. at 56; *see also Certain Sleep-Disordered Breathing Treatment Sys.*, Inv. No. 337-TA-890, Initial Determination at 149 (Aug. 21, 2014) (EDIS Doc. ID 542166), *unreviewed by* Comm'n. Op. at 45 n.13 (Jan. 16, 2015) (EDIS Doc. ID 549508) (investments in an unpatented flow generator for a patented CPAP humidifier included because the humidifiers could not function or practice the patent claims without the flow generator). Here, the evidence supports that the chipsets and operating system of the domestic industry products cannot function unless they are connected to and integrated into an electronic device such as tablets, phones, and the Xbox game system.

Amazon's arguments for this factor are not persuasive.

3. Direct Relationship to Exploitation of the Patented Technology

Amazon contends that the third factor, whether the domestic industry activities have a direct relationship to exploitation of the patented technology, supports its position because "Nokia

[redacted]

fails to demonstrate that there is *any* relationship—let alone a 'direct' one— between domestic activities for which it calculates investments and exploitation of the patented technology, which relates to minor features of H.264" and that "Nokia makes no effort to allocate investments in the alleged Domestic Industry Products to integration of the patent-practicing articles into the downstream products or implementation of these minor features." Amazon Reply at 62. Nokia and the Staff disagree. Nokia Br. at 93–94; Staff Br. at 51–52; and Staff Reply at 10. To the extent Amazon's argument can be understood, Amazon appears to be contending that a direct relationship to exploitation of the patented technology can be shown only by allocating investments on a feature-by-feature basis. Amazon is wrong.

The evidence demonstrates that the domestic activities of Samsung and Microsoft have a direct relationship to the exploitation of the patented technology. The functionalities that relate to consumer appeal like video encoding and decoding enable Microsoft and Samsung to exploit the patented inventions. Herrington Tr. at 326:16–327:3, 333:24–336:18, 374:4–12, 382:2–13, 384:8–14, and 401:11–23. The asserted patents can only be exploited by end-users when the components, the chipsets or operating system, are integrated into the Microsoft and Samsung domestic industry products, so that can encode and/or decode video. Orchard Tr. at 472:3–21, 489:3–15, 501:11–502:24, 510:3–17, 531:14–532:8, and 585:23–586:3; Kia Tr. at 616:11–617:11, 697:14–698:16, and 701:1–12. Because the chipsets themselves cannot function without being incorporated into another device, Microsoft and Samsung's investments in the domestic industry products directly enable the patented technology to be exploited. Without Microsoft's and Samsung's investments in the domestic industry products, the H.264 standard would not be practiced by those products. End users could not exploit the asserted patents unless the components are integrated into a device that can code video. Herrington Tr. at 334:22–336:1; CX-5873C (Oberoi Dep. Tr.); CX-5876C

[redacted]

(Romero Dep. Tr.); CX-5879C (Sheppard Dep. Tr.); and CX-4574C (Sheppard Decl.). The qualifying activities associated with the domestic industry products are necessarily related to the exploitation of the patented technology. Herrington Tr. at 336:13–17.

Amazon has not adduced any credible evidence that the asserted patents can be exploited without the chipsets or operating system integrated into the domestic industry products so they can encode and decode video. Amazon has not adduced any credible evidence that the domestic industry products can stream video without components and software other than the chipsets and the operating system. In addition, showing a direct relationship to exploitation of the patented technology does not require allocating investments on a feature-by-feature basis. Herrington Tr. at 401:11–23 and *Certain Solid State Storage Drives*, Inv. No. 337-TA-1097, Comm. Op. at 13–14 (June 29, 2018) (EDIS Doc. ID 649139) (with respect to showing domestic industry under subsection (B) in various investigations, the Commission "did not require complainant to show a nexus between the investments and the asserted patent(s) in order to satisfy the requirements" and "the Commission found that complainants had made the necessary showing that their labor costs were sufficiently 'related to' the domestic industry products.").

Amazon relies on the testimony of Dr. Mody for the proposition that Microsoft's and Samsung's activities are not related to video and are not related to exploiting the patented technology. Amazon Reply at 62–63, *citing* Mody Tr. at 1227:4–1228: 22 (Microsoft) and 1228:24–1230:1 (Samsung). In disputing that there is a direct relationship between the chipsets and the Microsoft Surface into which those chipsets are incorporated, Dr. Mody relied on testimony from a finance manager at Microsoft who stated that that the [redacted] Because Microsoft's finance manager made no

statement "about them being related to video or the H.264" standard, Ms. Mody concluded that there was no direct relationship between Microsoft's investments and the patented technology. Mody Tr. at 1227:19–1228:4. The testimony Ms. Mody relies on was in response to the question to "explain generally what [Microsoft's] people do when it comes to working on Surface products, all the various things they do for the Surface hardware." RDX-0013C.11, *citing* CX-5873C (Oberoi Tr.) at 17:15–18:4. It is hardly surprising, and certainly not determinative, that Microsoft's finance manager made no statement "about [Microsoft's investments] being related to video or the H.264" standard in response to this question.

As to the Microsoft Xbox, Ms. Mody likewise relied on testimony from a Microsoft finance manager, who Ms. Mody concluded that activities relating to the Microsoft Xbox are not "directly related[] to the patented technologies." Mody Tr. at 1228:5–18. The testimony Ms. Mody relied on was in response to the question, "if I were sitting next to you on a plane or wherever and you wanted to explain all the work that the employees in the United States do to develop Xbox . . . what . . . would you tell me?" RDX-0013C.12, *citing* CX-5876C (Romero Tr.) at 23:22–24:15. It is hardly surprising, and certainly not determinative, that Microsoft's finance manager did not "mention anything about video" in response to this question.

As to the Samsung Galaxy products, Dr. Mody relied on the testimony of a vice president of logistics at Samsung Electronics America that that entity is not involved with to conclude that there is no direct relationship between

[redacted]

Samsung's activities and the patented technology. Mody Tr. at 1228:23–1230:7 and RDX-0013C.14, *citing* CX-5879C (Sheppard Tr.) at 73:3–74:18. As Dr. Mody recognized, however, Samsung's activities are [redacted] Mody Tr. at 1228:4–6. Those activities allow the Samsung domestic industry products to exploit the patented technology.

Amazon's arguments for this factor are not persuasive.

The evidence supports that each of the three factors weighs in favor of the domestic industry extending to the domestic industry products.

C. Microsoft's Domestic Activities

1. Overview of Microsoft's Domestic Activities

Microsoft is a U.S. company headquartered in Redmond, Washington, where it maintains its primary product research and development facilities and employees. *See* Herrington Tr. at 339:6–340:6, 346:23–347:4, 349:13–25, and 352:14–18; CX-5873C (Oberoi Dep. Tr.) at 25:3–26:12; and CX-5876C (Romero Dep. Tr.) at 23:2–24:19 and 25:16–26:6. Microsoft primarily invests domestically in its products, including research and development. *Id.* Microsoft's research and development investments in the U.S. have been necessary to bring Microsoft domestic industry products to market, are critical to producing a saleable product, and essential to providing ongoing support. Herrington Tr. at 351:20–353:18; CX-5873C (Oberoi Dep. Tr.) at 17:9–18:4 and 56:3–20; and CX-5876C (Romero Dep. Tr.) at 35:11–37:6.

The Microsoft Surface devices are touchscreen personal computers. Herrington Tr. at 325:25–326:15. Microsoft research and development employees working on Surface devices manage '[redacted] and are responsible for [redacted] CX-5873C (Oberoi

[redacted]

Dep. Tr.) at 8:1–9:2, 17:15–18:4, 33:22–34:21; and Herrington Tr. at 340:16–341:3. Those teams perform research and development on Surface devices [redacted]. CX-5873C (Oberoi Dep. Tr.) at 52:1–56:20.

The Microsoft Xbox devices are gaming consoles that enable people to connect and share online gaming experiences utilizing enhance video and graphics capabilities. Herrington Tr. at 325:25–326:15. Microsoft has about [redacted] research and development employees including engineers and designers within the Xbox hardware division. CX-5876C (Romero Dep. Tr.) at 8:6–20, 13:16–22, 18:17–19:17, and 23:22–24:19. Those activities, [redacted]. *Id.*; Herrington Tr. at 385:9–15.

Microsoft tracks its expenditures, including related to domestic and foreign research and development costs, in the ordinary course of business through its financial database, [redacted] Herrington Tr. at 341:11–17; CX-5873C (Oberoi Dep. Tr.) at 11:22–17:8 and 54:9–55:1; CX-5876C (Romero Dep. Tr.) at 11:6–13:22, 15:6–16:14, and 20:5–21:9. Microsoft provided documentation of its expenditures for its fiscal years 2021 through 2023 (July 1, 2020, to June 30, 2023). CX-4576C; CX-4577C; CX-4832C; CX-4906C; CX-4910C to CX-4913C; CX-5707C; and CX-5708C. Research and development investment numbers reflect the efforts that went into [redacted] CX-5873C (Oberoi Dep. Tr.) at 37:6–12, 56:3–20; and CX-5876C (Romero Dep. Tr.) at 35:11–37:6.

[redacted]

2. Microsoft's Domestic Expenditures

a) Plant and Equipment

The evidence supports that in fiscal years 2021–2023, Microsoft expended [redacted] on Surface domestic industry products and [redacted] on Xbox domestic industry products (totaling [redacted]) for qualifying research and development expenditures. Herrington Tr. at 345:1–11, 347:8–15; CX-5523C to CX-5525C (Microsoft plant and equipment investments); CDX-0010C.13 and 15.

b) Labor or Capital

The evidence supports that in fiscal years 2021–2023, Microsoft expended [redacted] for Surface domestic industry products and [redacted] for Xbox domestic industry products (totaling [redacted]) on qualifying domestic research and development labor expenditures. Herrington Tr. at 338:3–339:2, 345:12–23; CX-5526C to CX-5528C (Microsoft labor and capital investments); CDX-0010C.14 and .16. Adding in capital (*i.e.*, equipment), Microsoft incurred [redacted] for Surface domestic industry products and [redacted] for Xbox domestic industry products (totaling [redacted]) on qualifying domestic research and development labor and capital expenditures. *Id.*

3. Significance Analysis

Nokia contends that Microsoft's investments are qualitatively and quantitatively significant. Nokia Br. at 96–98. The Staff agrees. Staff Br. at 58–60 and Staff Reply at 11–12. Amazon disagrees. Amazon Reply at 71–73.

The evidence supports that Microsoft's investments are qualitatively significant because they support activities that are necessary for the functionality, salability, and viability of the Microsoft domestic industry products. Herrington Tr. at 339:6–340:6, 346:23–347:4, 349:13–25,

[redacted]

351:20–353:18; CX-5873C (Oberoi Dep. Tr.) at 17:9–18:4, 25:3–26:12, 33:22–34:21, 52:1–21, and 55:10–56:20; CX-5876C (Romero Dep. Tr.) at 23:2–24:19, 25:16–26:6, and 35:11–37:6. Investments upon which Nokia relies include research and development and engineering investments that are necessary to bring Microsoft domestic industry products to market as saleable products and also necessary post-sale activities like [redacted]. *Id.* These investments also relate to [redacted]. *Id.*

The evidence also supports that Microsoft's investments in its Surface and Xbox domestic industry products are also individually significant and stand on their own as demonstrated by Mr. Herrington's testimony. Herrington Tr. at 351:20–353:22. Without Microsoft's investments, there would be no Surface or Xbox products. *Id.*

The evidence supports that Microsoft's domestic industry investments exceeding [redacted] are quantitatively significant in absolute terms. They are also significant in context, as they represent a major portion of all investments in Microsoft domestic industry products worldwide. Microsoft's domestic plant and equipment investments represent [redacted] of total worldwide plant and equipment research and development investments for relevant divisions allocated to Microsoft domestic industry products. CX-5529C to CX-5540C (Microsoft plant and equipment significance). Qualifying domestic plant and equipment research and development investments constitute [redacted] of Microsoft's total domestic plant and equipment research and development investments across relevant divisions. *Id.*

Microsoft's domestic labor research and development investments in its domestic industry products are a significant portion of all research and development efforts in all Surface and Xbox devices (domestically and worldwide), constituting [redacted] of Microsoft's total domestic research

[redacted]

and development labor expenditures for relevant divisions. CX-5541C to CX-5552C (Microsoft labor). Microsoft's investments also make up [redacted] of total worldwide labor research and development investments in relevant divisions. *Id.* Moreover, Microsoft's domestic labor and capital research and development investments in Microsoft domestic industry products are a significant portion of all research and development efforts in all Surface and Xbox devices (domestically and worldwide) using the same metrics. CX-5553C to CX-5565C (Microsoft labor and capital); Herrington Tr. at 348:9–353:18; CDX-0010C.17 and .19.

Amazon contends that Nokia has not shown quantitative or qualitative significance for Microsoft. Amazon Reply at 71–73. Amazon contends that "[t]he Commission considers 'the nature of complainant's activities to determine whether they are directed to the practice of one or more claims of the asserted patent.'" *Id.* at 71, *citing Certain Printing and Imaging Devices and Components Thereof*, Inv. No. 337-TA-690, Comm'n Op. at 28 (Feb. 17, 2011). Amazon argues that "Nokia cannot show that *any* alleged domestic industry investments are directed to any aspect of the Asserted Patents, much less qualitatively significant investments. No domestic activities are required by any claim limitation or directed to practicing the claims." *Id.* at 72 (citing its discussion of the third factor, whether the domestic industry activities have a direct relationship to exploitation of the patented technology). Amazon continues that (1) "Nokia's significance assertions are premised on a narrow definition of R&D and fail to consider all R&D investments in the alleged Microsoft Domestic Industry Products or investments in the alleged Microsoft Domestic Industry Products more generally," (2) "Microsoft's data related only to R&D expenses for the hardware in the alleged Microsoft domestic industry devices," and (3) "By focusing on one segment and ignoring other activities related to development, manufacture, and sale of the products, Nokia fails

[redacted]

to provide the necessary context, such as overall investments, to provide a reliable analysis of significance." *Id.* at 71–73.

To the extent Amazon's arguments can be understood, Amazon appears to be arguing that Nokia was obligated to perform several different comparisons in order to show "context" and "significance," comparisons such as research and development versus all research and development, hardware versus software, and one business segment versus all business segments. Amazon fails to explain why this is so. Amazon's decision to simply cite *Printing and Imaging Devices* for broad pronouncements without further elaboration is fatal to its arguments.

D. Samsung's Domestic Activities

1. Overview of Samsung's Domestic Activities

Samsung Electronics Co, Inc. is a Korean company, and Samsung Electronics America (SEA) is a United States subsidiary headquartered in Ridgefield Park, New Jersey. CX-4599 at 6 and 48 and CX-4605. SEA supplies consumer electronics products and services exclusively in the United States. CX-4574C (Sheppard Decl.) at ¶¶ 2–4 and CX-5879C (Sheppard Dep. Tr.) at 12:15–13:2. SEA has significant domestic operations, including [redacted] U.S. facilities, and over [redacted] U.S. employees. CX-4574C (Sheppard Decl.) at ¶ 3; Herrington Tr. at 355:9–13. SEA has made and continues to make investments in its Galaxy domestic industry products in [redacted] *Id.*

Samsung's domestic research and development unit has [redacted] Herrington Tr. at 354:21–356:21 and CX-4574C (Sheppard Decl.) at ¶ 17. [redacted]

SEA tracks its expenditures for its Galaxy domestic industry products, including domestic and foreign research and development costs in the ordinary course of business through Herrington Tr. at 355:14–22; CX-5879C (Sheppard Dep. Tr.) at 38:11–46:20 and 90:7–

[redacted]

93:13; CX-2231, CX-2779C, CX-4575C, CX-4738C, CX-4739C, and CX-4917C to CX-4922C (Samsung financials).

2. Samsung's Domestic Expenditures

a) Plant and Equipment

The evidence supports that SEA has made and continues to make cognizable investments in plant and equipment domestically related to its Galaxy domestic industry products. Herrington Tr. at 355:9–22 and 357:25–360:8; and CX-5565C to CX-5572C. Samsung uses [redacted]. CX-4574C (Sheppard Decl.); CX-4575C; and CX-5879C (Sheppard Dep. Tr.). In total, for 2021 through October 31, 2023, SEA incurred [redacted] on qualifying research and development expenditures for Galaxy domestic industry products that practice the asserted patents [redacted] in 2023). Herrington Tr. at 357:25–359:5 and CX-5568C (Samsung research and development investments).

b) Labor or Capital

The evidence supports that SEA has made and continues to make cognizable investments in labor domestically related to its Galaxy domestic industry products. Herrington Tr. at 356:1–357:9 and 357:25–359:5; and CX-5568C to CX-5573C. SEA's financial data also includes information related to SEA's labor investment with its domestic employees and third-party resources who are engaged in research and development activities for the Galaxy domestic industry products. CX-4574C (Sheppard Decl.) and CX-5879C (Sheppard Dep. Tr.). For research and development, Samsung employed nearly [redacted] U.S. employees. Herrington Tr. at 357:6–9 and CX-4574C (Sheppard Decl.) at ¶ 20. For Galaxy domestic industry products, SEA incurred [redacted] on qualifying domestic research and development labor expenditures in 2021–2023 ([redacted] in 2023). Herrington Tr. at 357:25–359:5 and CX-5568C.

[redacted]

3. Significance Analysis

Nokia contends that Samsung's investments are qualitatively and quantitatively significant. Nokia Br. at 104–05. The Staff agrees. Staff Br. at 63–64 and Staff Reply at 11–12. Amazon disagrees. Amazon Reply at 71–73.

The evidence supports that Samsung's investments are qualitatively significant because Galaxy domestic industry product sales highlight the qualitative significance of SEA's investments in Galaxy domestic industry products and demonstrate the importance of the investments. Herrington Tr. at 354:13–357:9 and 362:13–363:7. Galaxy is Samsung's flagship line of smartphones; SEA's sales of the Galaxy domestic industry products in the United States were approximately [redacted] of total mobile product sales revenue generated by SEA from 2021 to October 2023 (totaling [redacted] in net sales revenue). Herrington Tr. at 354:13–20 and 360:9–361:11; CX-5567C (Galaxy allocation); and CX-4574C (Sheppard Decl.) at ¶ 6. SEA's activities resulting in domestic industry expenditures relating to the Galaxy domestic industry products are important in the context of the marketplace. Herrington Tr. at 362:13–363:7. SEA's domestic investments in plant and equipment and labor and capital in the Galaxy domestic industry products are necessary to bring these products to market, and Galaxy domestic industry products are important to SEA, SEC, and the marketplace. *Id.* SEA's domestic activities and investments are qualitatively significant in the context of the industry and in SEA and SEC's respective businesses as they represent absolutely necessary and critical steps in the development of Galaxy domestic industry products. *Id.*

SEA's investments in the Galaxy domestic industry products are qualitatively significant in the context of SEA and SEC's respective businesses. From the "perspective of an extremely large business," the domestic industry expenditures may be "relatively small when compared to

[redacted]

its global sales," but "such expenditures may still have a significant effect on the relevant domestic industry in the United States." *Certain Lithium Metal Oxide Cathode Materials*, Inv. No. 337-TA-951, Initial Determination at 20 (Feb. 29, 2016) (EDIS Doc. ID 576521). Specifically, SEA's domestic investments are important and necessary to bring Galaxy domestic industry products to the United States market. SEA's domestic activities, including research and development and engineering investments, are activities that are necessary for the functionality, salability, and continued viability of the Galaxy domestic industry products. CX-5879C (Sheppard Dep. Tr.) at 23:2–38:10. SEA's domestic investments have led to the launch of the Galaxy domestic industry products and are important to producing a saleable product. *Id.*

The evidence supports that Samsung's investments are quantitatively significant because SEA's domestic investments in the Galaxy domestic industry products are sizable in absolute terms and are quantitatively significant in comparison to the global investments on labor with respect to Samsung mobile phones. Herrington Tr. at 360:9–365:20. For example, SEA's domestic investments in research and development plant and equipment in the Galaxy domestic industry products are [redacted] of the domestic total. Herrington Tr. at 360:9–361:11 and CX-5573C. Further, SEA's domestic investments in research and development plant and equipment in Samsung Galaxy domestic industry products are [redacted] of the total for SEA's mobile division. *Id.* Similarly, SEA's domestic investments in research and development labor in the Samsung Galaxy domestic industry products are [redacted] of SEA's total and [redacted] of SEA's mobile division. Herrington Tr. at 360:9–361:11 and CX-5576C. When all of Samsung's global research and development labor and capital investments in all products are considered, the domestic research and development labor and capital investments are well over [redacted] of that number, supporting the quantitative significance of those investments. Herrington Tr. at 363:8–365:20 and CX-5573C to CX-5582C.

[redacted]

Similar to its argument with respect to Microsoft, Amazon contends that Nokia has not shown quantitative or qualitative significance for Samsung because "Mr. Herrington used a self-servingly narrow set of expenditures to support his claim that SEA's domestic industry investments are 'significant,'" that "Mr. Herrington also selectively chose narrow business segments," that "Nokia's calculations of the alleged Samsung domestic industry investments compared to allocated SEC expenses are around [redacted] or less," and thus "[i]n context, these investments are not significant." Amazon Reply at 73. This is the entirety of Amazon's argument. For the same reasons discussed above regarding Microsoft, Amazon's argument with respect to Samsung fails.

E. Amazon's Additional Arguments

1. Improper Timeframe

Amazon contends that "Nokia failed to establish investments made during the relevant time period for a licensee" because Nokia's economic expert "Mr. Herrington calculated investments for Samsung back to 2021 even though Nokia failed to show the Samsung Domestic Industry Products were licensed to the asserted patents prior to [redacted]." Amazon Reply at 65–66. Nokia and the Staff disagree. Nokia Br. at 88; Staff Br. at 60–61 and Staff Reply at 11.

Nokia contends that Samsung has been licensed to practice the asserted patents "[redacted]" Nokia Br. at 88. The Staff contends that "Samsung was licensed to the asserted patents [redacted] Staff Reply at 11. I agree with Nokia and the Staff.

Amazon contends that the [redacted] This is a trivial point. [redacted] As argued by Nokia and the Staff, the evidence supports that Samsung has

been licensed to practice the asserted patents during the entire relevant period . Braun Tr. at 121:19–123:25 and 188:16–189:4 (testifying that ; Herrington Tr. at 397:19–399:25 and 402:11–21; CX-0625C to CX-0627C, CX-3033C, CX-3037C to CX-3043C, and CX-4230C (Samsung patent license agreements).

2. Pre-launch Activities

Amazon contends that "Nokia includes noncognizable expenses, overstating its domestic industry investments." Amazon Reply at 66. Amazon contends that for Surface products "Microsoft's witness testified " and for Xbox products "Microsoft's witness similarly testified that *Id.* at 67. Similarly, for Samsung products, Amazon contends that "Samsung's alleged domestic industry activities include *Id.* at 68.

However, as Mr. Herrington testified, even where a product was launched during a calendar year, the amount of accounting that may have extended post-launch would not have had a significant impact on the calculations. Herrington Tr. at 386:15–20. Dr. Mody agreed that products issue along a continuum so there are different launch dates for different products. Mody Tr. at 1268:6-11 and 1272:5-12.

3. Alleged Noncognizable Investments

Amazon contends that by including noncognizable investments, Nokia improperly inflates or overstates the alleged domestic industry. Amazon Reply at 68–71. The Staff disagrees. Staff Reply at 11–12.

For plant and equipment, Amazon contends that "Nokia overstates" Microsoft plant and equipment investments because "Mr. Herrington's alleged investments in plant and equipment for Microsoft includes Amazon Reply at 68. Similarly, Amazon criticizes Mr. Herrington for including for Samsung. *Id.*

As argued by the Staff, have been included as cognizable expenses, as Mr. Herrington explained. Herrington Tr. at 388:22–389:10 (testifying that . Also, during the hearing, Mr. Herrington did not rely on in his Samsung domestic industry analysis. Herrington Tr. at 357:25–358:11 and CDX-0010C.23 (.

For labor and capital, Amazon contends that for Microsoft "likely also included millions of dollars in severance expenses." Amazon Reply at 69. With respect to Samsung, Amazon contends that "Mr. Herrington's labor calculations for Samsung also include noncognizable expenses, such as ." *Id.* at 70. The Staff counters that even if these expenses do not qualify as labor and capital costs, they are *de minimus*, and the severance argument is speculative. Staff Reply at 12. I agree. Discounting these expenses would not affect the ultimate outcome given the amount of investments that are not contested. Amazon does not argue that even if the investments are overstated that that would somehow put a dent into the total labor and capital investment figures. Amazon does not offer an alternative calculation showing that the total investment amounts after subtracting the disputed categories is not enough.

[redacted]

As for the severance argument, it is pure speculation for which there is no credible evidence. While purporting to rely on a self-serving expert testimony, Amazon's one-sentence attorney argument that "[e]mployee severance expenses are counter to the purpose of the ITC and should be excluded," Amazon Reply at 69, is without merit. Amazon does not cite any precedent for why severance costs must be excluded.

F. Economic Domestic Industry as to Microsoft Xbox Products

The Microsoft Xbox products were identified as domestic industry products with respect to both the '808 and '134 patents. Orchard Tr. at 471:20–472:2 and CDX-0004C.47 ('808 patent) and Kia Tr. at 697:12–18 and CDX-0005C.74 ('134 patent). In the 1380 investigation, the parties stipulated that the record there would include testimony and exhibits from this investigation relating to, among other things, economic domestic industry. Stipulation at 2, item 2 (EDIS Doc. ID 830742). Based primarily on the record from this investigation, the ALJ in the 1380 investigation concluded that Nokia demonstrated an economic domestic industry specifically with respect to the Microsoft Xbox domestic industry products. *Certain Video Capable Electronic Devices, Including Computers, Streaming Devices, Televisions, and Components Thereof*, Inv. No. 337-TA-1380, Initial Determination at 168–74 (Dec. 20, 2024) (EDIS Doc. ID 839794). Based on the evidence and for the reasons stated there, Nokia has shown an economic domestic industry under subsections (A) and (B) for the patents asserted in this investigation that are practiced by the Microsoft Xbox domestic industry products.[13]

[13] The issue identified by the ALJ in the 1380 investigation as to CX-4912C and CX-5707C, ID at 170, n.9, has been resolved, as addressed above with respect to Motion No. 1379-053.

[redacted]

IX. OTHER DEFENSES

A. Breach of RAND Obligations

Amazon contends that "Nokia breached its obligation to provide [Amazon] a license to its alleged H.264 portfolio on RAND terms and conditions" as it was required. Amazon Br. at 43–58. Nokia and the Staff disagree. Nokia Br. at 117–26; Nokia Reply at 58–69; and Staff Br. at 64–67.

As an initial matter, encoding claims 1, 10, 21, 29, and 48 of the '808 patent are not essential to the H.264 standard. Nokia Identification at 1; H.264 standard at .0023 (encoding process is "not specified" in the standard); Nokia Br. at 113; CX-2320C at 136 (Amazon Rog. Resp.) ("the H.264 specification does not specify an encoding process"); Acton Tr. 1430:1–15 ("any commitments that may relate to essentiality would not apply to video encoders") and 1473:21–24 ("the encoding claims of the '808 patent at issue in this case cannot be standard essential because encoding processes are not covered by the H.264 standard"); and Staff Br. at 64. In addition, as detailed above, the asserted claims of the '134 patent, while directed to decoding, are not covered by the H.264 standard. RAND issues, therefore, are not relevant to encoding claims 1, 10, 21, 29, and 48 of the '808 patent or the asserted claims of the '134 patent. RAND obligations extend instead to decoding claims 7, 16, 22, and 40 of the '808 patent.

The evidence supports, and Nokia does not dispute, that it has a contractual obligation to license its essential decoding claims on RAND terms. RX-0364 (declaration form for the '808 patent). Nokia's most recent offer to Amazon is dated [redacted], repeats an offer it made in [redacted], and incorporates what Nokia calls its tiered "program rates":

[redacted]

[redacted]

CX-5514C at 1 and Braun Tr. at 114:7–25. As an alternative, with assumptions about Amazon's sales and sales prices, and [redacted], Nokia offered [redacted]. CX-5514C at 2–3 and Braun Tr. at 121:2–18. Nokia also offered [redacted]. CX-5514C at 3.

Amazon contends that Nokia's program rates have no economic basis and that Nokia's "€0.60 rate was apparently plucked from thin air." Amazon Br. at 45. The evidence supports, however, that [redacted] Nokia's licenses are based on Nokia's [redacted] program rates, [redacted]. Braun Tr. at 115:1–21 and Akemann Tr. at 805:9–807:18. The evidence supports that Nokia offers a per-unit royalty at [redacted] rates beginning at €0.60 per unit [redacted] Braun Tr. at 114:4–25; CDX-0007C.2; RX-1958C; RX-1981C (Gray Dep. Tr.) at 77:6–78:4 and 97:20–98:19. Nokia also granted [redacted]. Braun Tr. at 121:11–18. The offers made to Amazon were [redacted]. CX-5290C; CX-5291C; CX-5292C; CX-5293C; CX-5294C; CX-5373C; CX-5374C; CX-5375C; and CX-5377C. Nokia has entered into a large number of [redacted] agreements that include [redacted]. Akemann Tr. at 805:9–807:18; Braun Tr. at 115:1–18; CDX-0008C.6–8; *MLC Intellectual Prop., LLC v. Micron Tech., Inc.*, 10 F.4th 1358, 1374 (Fed. Cir. 2021); and *LaserDynamics, Inc. v. Quanta Computer, Inc.*, 694 F.3d 51, 79 (Fed. Cir. 2012) ("Actual licenses to the patented technology are highly probative as to what constitutes a reasonable royalty for those patent rights because such actual licenses most clearly

[redacted]

reflect the economic value of the patented technology in the marketplace."). Several of Nokia's agreements are based on [redacted]. Akemann Tr. at 808:23–809:9 and CDX-0008C.10. The evidence supports that [redacted] those agreements are comparable to Nokia's program rates, [redacted]. Akemann Tr. at 810:10–817:5.

Amazon contends that "Nokia's 'Comparable Licenses' reflect *Ex-Post* Hold-Up Value" because "its licenses demonstrate Nokia is trying to arrogate for itself the value of the entire H.264 standard" "rather than seek royalties on the value of its patented technology alone." Amazon Br. at 48. Any argument regarding holdup, however, is contradicted by the large number of sophisticated companies that have taken a license at Nokia's program rates. It is also belied by Amazon's own evidence regarding lock-in, which shows that the adoption rate of the H.264 standard was about 69% when Nokia started offering licenses, rose to about 82% in 2018, and is now less than 60%, but Nokia's program rates were the same during that period. RDX-0015C.22. Amazon also argues that Nokia "targeted small players" in the market and "leveraged litigation to establish" its program rates. Amazon Br. at 51–52. Nokia starting with smaller players, however, supports that companies with less exposure were willing to agree to the program rates.

Amazon contends that a RAND rate would be derived from patent pool rates, and in particular, MPEG-LA. Amazon Br. at 53–58. None of Nokia's patents – including the asserted patents – are part of the patent pools on which Amazon relies. *See LaserDynamics*, 694 F.3d at 79. There was no evidence presented at the hearing that the patents that are part of the patent pools are valuable, such that their value equates to the value of Nokia's patents. Indeed, patent pools often set sub-RAND rates to reduce their costs and drive down the pool founders' production costs. Akemann Tr. at 821:19–822:5; Braun Tr. at 208:12–209:20; and Brunelle Tr. at 248:22–249:6.

[redacted]

They also attract weaker patents because licensees with stronger portfolios are more likely to want to engage in bilateral negotiations because they can get a higher price for their patents. *In re Innovatio IP Ventures, LLC Patent Litig.*, 2013 WL 5593609, at *36 (N.D. Ill. Sep. 27, 2013).

Amazon also contends that two of Nokia's [redacted] licenses, [redacted], are more favorable that the offer made to it, making its offer discriminatory. Amazon Br. at 58. In particular, Amazon contends that these agreements have [redacted] *Id.* Lopez Tr. at 1683:6-1686:9 ([redacted]). [redacted]. CX-2645C. [redacted] CX-0624C and Lopez Tr. at 1684:14–1685:15.

Comparing effective royalty rates is one way to evaluate whether an offer is non-discriminatory, the "N" of RAND. Such a comparison, however, is between similarly situated entities. *TCL Comm. Tech. Holdings Ltd. v. Telefonaktiebolaget LM Ericsson*, 943 F.3d 1360, 1369 (Fed. Cir. 2019); and *Summit 6, LLC v. Samsung Electronics Co., Ltd.*, 802 F.3d 1283, 1299–1300 (Fed. Cir. 2015). Amazon does not argue, let alone provide evidence, that it is similarly situated to [redacted]. Amazon's argument thus fails.

There was no credible evidence showing that Nokia's program rates are not RAND. The terms "reasonable" and "non-discriminatory" are not defined by the ITU, leaving the determination of what is RAND up to the commercial entities negotiating licenses. CX-2420 (2018 ITU Guidelines) at Decl. p. 2 ("Negotiations are left to the parties concerned and performed outside the ITU-T, ITU-R, ISO, or IEC"). The evidence supports that Nokia did not breach its RAND obligation to Amazon.

[redacted]

B. Breach of Duty to Negotiate in Good Faith

Amazon contends that "Nokia breached its duty to negotiate in good faith." Amazon Br. at 59–70. Nokia and the Staff disagree. Nokia Br. at 126–32; Nokia Reply at 69–73; and Staff Br. at 67–71.

The ITU Common Patent Policy at the time Nokia entered into its commitment for the asserted patents stated that "[t]he patent holder is willing to negotiate licenses with other parties on a non-discriminatory basis on reasonable terms and conditions. Such negotiations are left to the parties concerned and are performed outside ITU-T / ITU-R / ISO / IEC." CX-2542 at 8 (Guidelines for Implementation of the Common Patent Policy for ITU-T / ITU-R / ISO / IEC (Mar. 1, 2007)); *see also Certain Wireless Devices with 3G Capabilities and Components Thereof*, Inv. No. 337-TA-800, Initial Determination at 421 (Jul. 29, 2013) (EDIS Doc. ID 514569) ("As stated in the ITU policy, this means the patent owner is 'willing to negotiate' licenses for the use of Essential patents.").

The evidence supports that the obligation to negotiate in good faith does not require specific licensing terms. The Common Patent Policy expressly states that "[s]uch negotiations are left to the parties and are performed outside ITU-T / ITU-R / ISO / IEC." CX-2542.1. A "good faith" determination must consider the overall course of negotiations, including all of the offers and counter-offers made. *See Microsoft Corp. v. Motorola, Inc.*, Case No. C10-1823-JLR, Docket No. 681, Findings of Fact & Conclusions of Law, 2013 WL 2111217 at *2 (W.D. Wash., Apr. 25, 2013) ("[I]nitial offers do not have to be on RAND terms so long as a RAND license eventually issues."); *Certain Electronic Devices, Including Wireless Communication Devices, Portable Music and Data Processing Devices, and Tablet Computers*, Inv. No. 337-TA-794, Comm'n Op. at 62 (Jul. 5, 2013) (EDIS Doc. ID 512742) ("[S]atisfaction of the obligation flowing from a

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FRAND declaration is not measured by a specific offer, 'be it an initial offer or an offer during a back-and-forth negotiation.'"). A patent owner breaches its obligation to negotiate in good faith if its behavior revealed: (1) its unwillingness to license its patents at all, or (2) an unwillingness to license its patent on RAND terms and conditions.

The evidence supports that Nokia negotiated with Amazon in good faith and did not breach its obligation to negotiate in good faith. Amazon and Nokia engaged in years of negotiations before Nokia filed the complaint in this investigation. Braun Tr. at 124:24–125:7; Hayden Tr. at 1009:14–22; and RX-2051C. The evidence supports that Amazon and Nokia [redacted]. Braun Tr. at 142:10–21 and Brunelle Tr. at 224:24–227:9. [redacted]. *See, e.g.*, CX-3516C (negotiation attachment); CX-2711C (Hayden to Patel negotiations); CX-2710C at 6 (License agreement showing [redacted]); and CX-5514C (email from Patel to Hayden).

Amazon makes several arguments that Nokia did not negotiate in good faith. Amazon Br. at 59–70. The evidence supports that none of these contentions demonstrate a lack of good faith. Amazon contends that it [redacted]. Amazon Br. at 61; RX-0118C ([redacted]). The basis for Amazon's argument is that, when Nokia acquired ALU's base station business, [redacted] RX-0118C.0023 and RX-0064C. Amazon, however, has not shown [redacted] RX-

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0118C.0023. [redacted]. There is no evidence that the asserted patents ever fell under [redacted]. In any event, the evidence supports that Nokia contended throughout the license negotiations that the [redacted]. Braun Tr. at 204:14–205:24 and CX-5514C (email from Patel to Hayden). Even if the asserted patents were licensed at some point, there is no evidence that Nokia failed to negotiate with Amazon in good faith.

Next, Amazon contends that Nokia did not explain its proposed royalty rate to Amazon. Amazon Br. at 60. Nokia, however, explained that the rates were based on an established rate based on other licenses. RX-0105C (email between Patel and Hayden). It was reasonable that Nokia could not offer more specific information, as the licenses are confidential. Not sharing confidential information does not show that Nokia acted in bad faith.

Amazon contends that Nokia "refused" to provide Amazon with a license covering all of Amazon's businesses. Amazon Br. at 60. Amazon admits, however, that Nokia made an offer to Amazon for its [redacted]. RX-1990C (Patel Dep. Tr.) at 156:18–157:12. Nokia told Amazon that [redacted]. If anything, the evidence supports that Nokia was trying to get the deal done.

Amazon contends that Nokia has attempted to paint it as a bad faith actor in this investigation. Amazon Br. at 63–64. This argument is irrelevant to resolving any dispute about the RAND issues. It is expected that adversarial parties embroiled in contentious litigation will try to paint the other party as a bad actor.

Finally, Amazon contends that Nokia made threats against Amazon, and subsequently sued Amazon. Amazon Br. at 66–67 and RX-0411C ([redacted]). As with the previous

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argument, this argument is also irrelevant. The statements Amazon points to (such as the fact that Amazon would face litigation) are common statements made during negotiations, and in fact, are not untrue given that Amazon is in fact facing litigation. *See* Amazon Br. at 62–63 (arguing bad faith based on Nokia's characterization of the facts in this case).

The evidence supports that Nokia did not breach its duty to negotiate in good faith.

C. Implied Waiver and Equitable Estoppel

Amazon contends that "Nokia breached its duty to timely disclose the Asserted Patents to the ITU, rendering those patents unenforceable under the defenses of implied waiver or equitable estoppel." Amazon Br. at 75–82. Nokia disagrees and contends that Amazon's "implied waiver and equitable estoppel defenses fail because Nokia did not breach any disclosure obligations for the Asserted Patents" and that Amazon "cannot prove these defenses because Nokia fully complied with the JVT IPR Policy and ITU Patent Policy." Nokia Reply at 73–81. The Staff agrees with Nokia and contends that "[t]he evidence does not show Respondents met their burden of proving the Asserted Patents are unenforceable based on implied waiver or equitable estoppel." Staff Br. at 71–74.

"To support a finding of implied waiver in the standard setting organization context, the accused must show by clear and convincing evidence that '[the patentee's] conduct was so inconsistent with an intent to enforce its rights as to induce a reasonable belief that such a right has been relinquished.'" *Hynix Semiconductor Inc. v. Rambus, Inc.*, 645 F.3d 1336, 1348 (Fed. Cir. 2011), *citing Qualcomm, Inc. v. Broadcom Corp.*, 548 F.3d 1004, 1020 (Fed. Cir. 2008).

The elements of the equitable estoppel are "(1) misleading conduct, which may include not only statements and action but silence and inaction, leading another to reasonably infer that rights will not be asserted against it; (2) reliance upon this conduct; and (3) due to this reliance, material

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prejudice if the delayed assertion of such rights is permitted." *Certain Bearings and Packaging Thereof*, Inv. No. 337-TA-469, Initial Determination at 28 (April 10, 2003) (EDIS Doc. ID 182120) (citations omitted). "To show reliance, the infringer must have had a relationship or communication with the plaintiff which lulls the infringer into a sense of security." *Id.*, *quoting A.C. Aukerman Co. v. R.L. Chaides Const. Co.*, 960 F.2d 1020, 1043 (Fed. Cir. 1992) (en banc).

Amazon's reliance on *Qualcomm v. Broadcom*, Amazon Br. at 76–77, is misplaced. *Qualcomm v. Broadcom*, 548 F.3d 1004, 1020–21 (Fed. Cir. 2008). The situation here is not the same as that in *Qualcomm*. There, Qualcomm intentionally concealed patents from consideration by the JVT with an intention to obtain higher royalties later. *Id.* Amazon has not presented any evidence that there was any intentional concealment by Nokia. Qualcomm also refused to admit it participated in the JVT, and refused to produce discovery. *Id.* at 1009. And Qualcomm argued that no patent disclosure was necessary. *Id.* at 1013. Nothing close to any of that happened here.

Although the *Qualcomm v. Broadcom* decision was focused on the "best efforts" requirement in the ITU disclosure, there was no discussion regarding whether patents actually have to be identified to comply with the ITU requirements. Here, Nokia filed disclosure forms, but did not identify the actual patents. The evidence, however, demonstrates that the disclosure forms were attached to the contributions that formed the basis for the patents. Levin Tr. at 1807:21–11 and 1811:11–16; CX-0594 at 5; and CX-2543. The evidence supports that Nokia provided notice that it had patents related to the relevant contributions. Levin Tr. at 1812:1–12.

The evidence also supports that Nokia's disclosure was consistent with the ITU patent policy. Levin Tr. at 1809:22–1811:6. On the ITU Patent Declaration form, there are three options. CX-1807 (Guidelines for Implementation of the TSB Patent Policy) at Appendix 1 and Appendix 2. Nokia chose the second option, which is a declaration that the patent holder is

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willing to license essential patent claims on RAND terms. *Id.*; CX-1846; CX-2421; CX-2161; and CX-2423–CX-2538. The only option that requires disclosure of the actual patents is the third option, which is chosen if a participant is not willing to license essential claims. CX-1807 (Guidelines for Implementation of the TSB Patent Policy) at Appendix 1, Appendix 2. The majority of ITU IPR disclosures that select option 2 do not disclose actual patent numbers. Levin Tr. at 1817:10–1821:15; CX-1846; CX-2421; CX-2161; CX-2423–2538; CX-2635; *see Rambus Inc. v. Infineon Technologies AG*, 318 F.3d 1081, 1096 (2003) (looking at the way JEDEC members treated the language of JEDEC's IPR policy to determine the disclosure duty). The evidence supports that Nokia complied with the IPR policy.

Amazon also contends that Nokia did not comply with the ITU IPR policy because it did not disclose specific patent information before the standard issued. As discussed above, the evidence shows that, because Nokia was not under an obligation to disclose specific patent information, there was no obligation to breach. The ITU IPR Policy also does not establish a timing requirement for submission of the Patent Declarations. *See* CX-1807 at §§ 1, 2.4, and 6 (describing disclosures taking place at different stages of development including after publication), Appendix 1 and Appendix 2. The evidence supports that Nokia disclosed that it had patents related to the contributions at the time it made those contributions. Levin Tr. at 1817:10–1821:15.

Amazon's implied waiver contention falls short because Nokia's conduct was not "so inconsistent with an intent to enforce its rights as to induce a reasonable belief that such a right has been relinquished." The evidence supports that Nokia's actions were the opposite. Amazon's estoppel contention also fails because the evidence does not support that there was any misleading conduct by Nokia.

[redacted]

D. Waiver of Right to Exclusionary Relief

Citing examples of statements made by Nokia in prior litigations, Amazon contends that "Nokia has waived its right to exclusionary relief for SEPs" because "Nokia has repeatedly, forcefully denounced exclusionary relief against RAND-encumbered SEPs." Amazon Br. at 82–84. Amazon contends that "[a]s Dr. Simcoe explained, '[G]iven the number of times and the clear understanding displayed across all of those comments submitted by Nokia in various forums' it is not likely Nokia 'simply changed their mind based on this particular investigation'" and that Nokia did not "present any evidence of a change in position." *Id.* at 83–84.

Nokia and the Staff disagree. Nokia contends that its "statements made between 2006 and 2013 are not 'conduct [] so inconsistent with [Nokia's] intent to enforce its rights as to induce a reasonable belief that such right has been relinquished' today" and that Amazon has not shown that "Nokia benefited from its prior, rejected positions." Nokia Reply at 81–82. The Staff contends that each case is unique and that "[i]n this case, it is undisputed that Nokia indicated that it would grant a RAND license to those wanting to practice the H.264 standard, but it never made a statement that it would not seek exclusionary relief" and that "a Section 337 remedy is not foreclosed due to the existence of RAND obligations." Staff Br. at 74.

Amazon cites to *Barnes & Noble* for the proposition that "[w]aiver occurs when there is an 'intentional relinquishment of a known-right.'" Amazon Br. at 82, *citing Barnes & Noble, Inc. v. LSI Corp.*, 849 F. Supp. 2d 925, 941 (N.D. Cal. 2012). Amazon also relies on *Core Wireless*, focusing on the statements: "A participant in a standards-setting organization may waive its right to assert infringement claims against products that practice the standard. Implied waiver occurs when the patentee's 'conduct was so inconsistent with an intent to enforce its rights as to induce a

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reasonable belief that such right has been relinquished.'" *Id.*, *citing Core Wireless Licensing S.A.R.L. v. Apple, Inc.*, 899 F.3d 1356, 1365 (Fed. Cir. 2018) (citations omitted).

I agree with Nokia and the Staff. Each case is unique. Here, a determination needs to be made as to the specific IPR disclosures and the nature of Nokia's commitments to the standards setting bodies. The evidence supports that Nokia has been and is ready and willing to grant a license on RAND terms, as discussed in detail above. While I agree with Amazon that Nokia has made many prior statements calling into question Nokia's position in this investigation, Amazon Br. at 82–83, those statements do not rise to such a level that would "induce a reasonable belief" that Nokia has relinquished its right to an exclusionary relief at the Commission today. The evidence does not support that Nokia intentionally relinquished its known right and thus waived its right to exclusionary relief in this investigation.

E. Laches

Laches requires proof that: "(a) the patentee's delay in bringing suit was unreasonable and unexcusable, and (b) the alleged infringer suffered material prejudice attributable to the delay." *SCA Hygiene*, 807 F.3d at 1317, *quoting Aukerman*, 960 F.2d at 1028 (Fed. Cir. 1992).

Amazon contends that "Nokia's deliberate delay in filing suit against Amazon precludes Nokia's request for exclusionary relief." Amazon Br. at 87–89. Amazon contends that Nokia began licensing discussions in 2009 [redacted], and that "[redacted]." *Id.* at 88. Amazon argues that "Nokia's delay materially prejudiced Amazon" because "Amazon has become locked into the standard and Nokia's recent demands take advantage of that lock-in" and because Nokia no longer has relevant evidence inasmuch as certain key people have since retired from Nokia. *Id.*

The Staff contends that "the facts here do not support a finding of laches" because Nokia's alleged 15-year delay from 2009 to 2023 before filing suit against Amazon "is not an unreasonable delay, because throughout much of this time period, including most of the time period the Accused Products were available, Nokia was engaging in license negotiations with Amazon." Staff Br. at 76. Nokia contends that it "was (and continues) negotiating in good faith." Nokia Reply at 85. Nokia also contends that "Amazon cannot argue that Nokia waited too long to sue, while simultaneously arguing that Nokia breached its duty to negotiate in good faith by filing suit too quickly." *Id.*

I agree with the Staff and Nokia. As discussed above with respect to RAND, the evidence supports that Nokia has negotiated with Amazon in good faith over many years and continues to do so. Amazon has not shown any unreasonable or unexcusable delay. *Aukerman*, 960 F.2d at 1033 ("negotiations with the accused" can excuse delay). Indeed, Amazon's position on delay is undercut by the fact that it argues that Nokia should have continued negotiating in lieu of filing suit. It is also undercut by a statement made recently by the Federal Circuit that Amazon highlighted in its Notice of Supplemental Authority at 1 (EDIS Doc. ID 836255). *Telefonaktiebolaget LM Ericsson v. Lenovo (U.S.), Inc.*, 120 F.4th 864, 876 (Fed. Cir. 2024) ("Given the SEP-related concerns underlying the FRAND commitment, if the FRAND commitment means anything of substance, it must mean that an SEP holder that has made such a commitment cannot just spring injunctive actions against other standard implementers without having first complied with some standard of conduct. That standard of conduct, we conclude, must be—at a minimum—the very one imposed by the FRAND commitment's good-faith-negotiating obligation."). Amazon's assertion of laches supports that Nokia did not "just spring" an injunctive action against Amazon. In addition, while it cannot be disputed that many years have passed since

the parties' licensing discussions began in 2009, the evidence does not support prejudice to Amazon. The evidence does not support laches.

F. Patent Misuse and Unclean Hands

Amazon contends that "Nokia's effort to use purportedly essential patents to obtain supra-competitive and disproportionate royalties constitutes patent misuse" and that "Nokia now comes before the Commission with unclean hands" by "now engag[ing] in the very activities it previously characterized as hold-up, extortion, unfair exploitation, behavior antithetical to FRAND commitments, hostage holding, and anticompetitive behavior." Amazon Br. at 89. Amazon contends that Nokia's actions changed over the decades and that "once Nokia sold its phone business and became a NPE, it set about to maximize its H.264 SEPs including by using the threat of injunctions to demand royalties far in excess of what it had contended was proper when the H.264 was first approved" and Nokia now "even though it likely invested less than 20 million dollars in research and development for both the H.264 and H.265 standards combined and even though it contributed only trivial features to the standards." *Id.* at 90. Amazon also contends that Nokia's actions "impermissibly expand the scope of its patent-grants, is entirely antithetical and thus offensive to standardization predicated on RAND obligations, and should not be rewarded." *Id.*

Nokia disagrees with Amazon, contending that "Nokia complied with its RAND obligations and seeking exclusionary relief for RAND-encumbered SEPs is not anticompetitive," that "violating RAND and seeking exclusionary relief is not evidence of patent misuse because it does not broaden the patent's physical or temporal scope" and that "patentholders cannot misuse patents by conditioning license rights unless they have 'market power in the relevant market for the patent or patented product'—a fact [that Amazon has] neither pleaded nor proven." Nokia

[redacted]

Reply at 85. Nokia also argues that Amazon's unclean hands defense fails because "Nokia's patents did not spring from fraud or inequitable conduct." *Id.* The Staff disagrees with Amazon and contends that Amazon has not shown patent misuse because "the evidence shows that Nokia did not breach its RAND obligations, that there is no evidence that its license offers were not RAND, and there is no reason Nokia is precluded from seeking exclusionary relief" and that Amazon has not shown unclean hands because "the evidence showed that Nokia has an established royalty program based on other licenses." Staff Br. at 79.

"Patent misuse is an equitable defense to patent infringement." *U.S. Philips Corp. v. Int'l Trade Comm'n*, 424 F.3d 1179, 1184 (Fed. Cir. 2005). It is based on a policy of "prevent[ing] a patentee from using [their] patent to obtain market benefit beyond that which inheres in the statutory patent right." *Princo Corp. v. Int'l Trade Comm'n*, 616 F.3d 1318, 1328 (Fed. Cir. 2010) (en banc) (internal quotations omitted), *quoting Mallinkrodt, Inc. v. Medipart, Inc.*, 976 F.2d 700, 704 (Fed. Cir. 1992). The patent misuse doctrine is narrow, and the key inquiry is whether "the patentee has impermissibly broadened the physical or temporal scope of the patent grant and has done so in a manner that has anticompetitive effects." *Princo*, 616 F.3d at 1328–1329.

When "a party who, as actor, seeks to set the judicial machinery in motion and obtain some remedy, has violated conscience, or good faith, or other equitable principle, in his prior conduct, then the doors of the court will be shut against him" based on the doctrine of unclean hands. *Keystone Driller Co. v. General Excavator Co.*, 290 U.S. 240, 244–45 (1933) (internal quotations omitted).

As an initial matter, Amazon does not cite any case showing the relevance of its argument that Nokia [redacted] "even though it likely invested less than 20 million dollars in research and development." As discussed above, I agree with Nokia and the Staff that the evidence

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supports that Nokia did not breach its RAND obligations and that there is no evidence that its license offers were not RAND. Amazon has not shown that Nokia's actions somehow "impermissibly broadened the physical or temporal scope of the patent grant and has done so in a manner that has anticompetitive effects," the key inquiry in assessing patent misuse. I also agree with the Staff that Amazon has not shown unclean hands because the evidence supports that Nokia has an established royalty program based on other licenses. The evidence does not support Amazon's contentions that Nokia committed patent misuse or has unclean hands.

X. CONCLUSIONS OF LAW

1. The Commission has statutory authority.
2. Nokia is the owner by assignment of the asserted patents.
3. The importation requirement is satisfied for the accused products.
4. Claims 1, 7, 10, 16, 21, 22, 29, 40, and 48 of the '808 patent have been shown to be infringed.
5. Claims 9, 11, and 13–15 of the '134 patent have not been shown to be infringed.
6. Claims 1, 7, 10, 16, 21, 22, 29, 40, and 48 of the '808 patent have not been shown to be invalid.
7. Claims 9, 11, and 13–15 of the '134 patent have not been shown to be invalid.
8. The technical prong of the domestic industry requirement has been satisfied with respect to the '808 patent.
9. The technical prong of the domestic industry requirement has not been satisfied with respect to the '134 patent.
10. The economic prong of the domestic industry requirement has been satisfied with respect to the asserted patents.

XI. PUBLIC INTEREST

In the Notice of Investigation, the Commission directed me to take evidence or other information and hear arguments from the parties or other interested persons with respect to the

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public interest and provide the Commission with findings of fact and a recommended determination on this issue, limited to the statutory public interest factors in 19 U.S.C. § 1337(d)(1), (f)(1), and (g)(1). 88 Fed. Reg. 84832.

Before issuing a remedy for a violation of section 337, the Commission must consider the effect of the remedy on the following public interest factors: (1) the public health and welfare; (2) competitive conditions in the United States economy; (3) production of like or directly competitive articles in the United States; and (4) United States consumers. 19 U.S.C. §§ 1337(d)(1), (f)(1). The purpose of a public interest analysis is not to determine whether any of the parties is a bad actor, or whether a party's actions have harmed the public. The public interest analysis is also not an equitable defense to patent infringement. It is, instead, an element of the trade statute from which the Commission's authority is derived, one that the Commission is specifically required to consider whether or not any evidence is presented on the subject. *See Certain Hybrid Vehicles and Components Thereof*, Inv. No. 337-TA-688, Ltr. from ALJ Essex to Counsel of Record (Jan. 15, 2010) (EDIS Doc. No. 417576). Its purpose is to determine the effect of an exclusion order and/or cease and desist order on the four statutory public interest factors. 19 U.S.C. § 1337(d)(1).

The statute does not place the burden on any party to an investigation of proving that a public interest concern precludes a remedy or requires tailoring of a remedy. *Certain Microfluidic Devices*, Inv. No. 337-TA-1068, Comm'n Op. at 29 (Jan. 10, 2020) (EDIS Doc. ID 698855).

When the Commission delegates public interest to the ALJ, it has stated that it expects "the development of a fulsome evidentiary record on the public interest, especially direct evidence from the third parties in the United States that are likely to be impacted." *Microfluidic Devices*, Inv. No. 337-TA-1068, Comm'n Op. at 29–30. In particular, "where public interest is delegated to the ALJ, it is important, even if not technically required, that all parties to the proceeding—

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complainant, respondent, and OUII—seek factual information and statements from knowledgeable sources, including interested third parties, during fact discovery, and present this information and evidence subject to cross-examination and rebuttal at the hearing so that the ALJ's RD will provide a complete and reliable factual record on the statutory public interest considerations." *Id.* at 30, n.26. The public interest is considered below.

Nokia contends that "[o]n balance, Nokia's requested remedies would likely benefit the public interest by protecting Nokia's intellectual property rights and by eliminating Respondents' unfair competition against Nokia licensees" and that "[p]ermitting unlicensed suppliers to import infringing products devalues Nokia's licenses and undermines future investment in similar technologies." Nokia Br. at 132. Amazon contends that "[i]t is not always in the public interest to enforce intellectual property rights through an exclusion order" and that in this investigation "there is no benefit to Nokia or to the U.S. economy, public health, or welfare from an exclusion order, but there is significant harm." Amazon Br. at 91. The Staff disagrees with Amazon and contends that [t]here was no credible evidence the public interest will be harmed by the remedial orders." Staff Br. at 92.

Each of the public interest factors is considered below.

A. Public Health and Welfare

Amazon contends that the requested relief will harm the public health and welfare because: (1) the exclusion order would result in Amazon halting investments in its product lines, which will lead to job losses; and (2) Amazon's accused products "have many health, accessibility, educational, and safety uses that will be harmed by Nokia's requested relief." Amazon Br. at 95–100.

[redacted]

As to the first issue, Amazon contends that "[e]xcluding the Accused Products would have an extreme, and direct, impact on U.S. investments, jobs, and innovation." *Id.* at 95. Amazon relies on the initial determination in *Certain Microprocessors, Components Thereof & Products Containing the Same*, Inv. No. 337-TA-781, Initial Determination at 366–369 (Dec. 14, 2012) for the proposition that "[p]ublic welfare also encompasses employment and economic growth." To the extent authoritative, however, in that investigation there was specific evidence regarding the impact on manufacturing in the United States as a result of an exclusion order. *Id.* No such evidence was presented here. Instead, while Amazon contends that it is "the largest job creator and the second largest private employer in the U.S." and that it invested $46.5 billion in the U.S. in 2023, Amazon Br. at 96–97, Amazon provided no specific evidence regarding how its operations in the United States or anyone else's operations, let alone any manufacturing operations, would be impacted. Instead, Amazon provided amorphous testimony that an exclusion order "would definitely impact our sales" of the accused products, which "would impact the employees that are working on those" and that Amazon "would have less R&D money to invest into to the next innovations and products that would come later." Amazon Br. at 95, *citing* Hayden Tr. at 1032:16–1033:13. The other testimony Amazon cites fares no better. Amazon Br. at 95, *citing* Hayden Tr. at 988:22–989:16 (Amazon's consumer electronic devices, including the accused products, helped it to "expand[] from being an online book store that we started at 30 years ago"; *id.* at 991:21–25 (Amazon has over 20,000 U.S. patents, including 4,500 on the accused products); *id.* at 1008:25–1009:4 (Amazon research and development takes place in the United States); Mody Tr. at 1256:5–11 (an exclusion order "would have an impact on Amazon and HP"); and CX-5881C.0146 (Thuvara Dep. Tr.) ("thousands" of people work on Alexa). The evidence provided by Amazon does not support harm to U.S. investments and employment.

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Amazon also argues that because its accused products include features used for telemedicine, digital health access, performing health screenings and others, the public health and welfare will be adversely impacted by an exclusion order. Amazon Br. at 98–100. As argued by the Staff, however, the accused products are not themselves medical devices or specialized for use in medical-related contexts, and any medical or health-related features are available through other alternative means, including phones and other electronic devices and in-office visits. Hayden Tr. at 1109:9–1111:11 (Amazon's corporate representative testifying that the medical applications he testified to on direct examination are available on any iOS or Android device).

The evidence supports that the public health and welfare factor does not weigh against issuing a remedy in this investigation.

B. Competitive Conditions in the United States Economy

In assessing competitive conditions in the U.S. economy, a relevant inquiry is whether there are "reasonable substitutes for devices subject to the exclusion order in terms of features, price points, and other pertinent factors." *Certain Electronic Digital Media Devices and Components Thereof*, 337-TA-796, Comm'n. Op. at 120 (Sep. 6, 2013) (EDIS Doc. ID 517720). The evidence supports that Amazon accused products are part of highly competitive industries with numerous suppliers, including Nokia's licensees. CX-0422; CX0423; and CX-0424. Given the number of alternatives, the evidence supports that competition in the U.S. will continue.

The evidence supports that Amazon's market share of tablets is 15%, though it may be as low as 9%, of streaming devices is 13%, and of cameras is 15%. Dastmalchi Tr. at 944:19–23, and 947:2–7, and 947:15–21. Mr. Dastmalchi analyzed the inventory for comparable products concluded that existing inventory in the United States could supply the market for any short term shortages for at least two months. Dastmalchi Tr. at 944:24–948:9; CDX-011C.12, .16, and .19

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(citing evidence); and RX-0420. The evidence also supports that businesses in the industry have processes in place to respond to increased demand and have continuity plans to respond to market disruptions, and would use those plans to respond to any shortage caused by any remedy issued in this investigation. Dastmalchi Tr. at 941:14–943:13.

Relying on its expert, Dr. Mody, Amazon counters that "Mr. Dastmalchi's analysis concluding that Respondents' products could be easily replaced is economically unsound and unreliable." Amazon Reply at 78. Dr. Mody, however, is not a supply chain expert and did not consider ODM-held inventory, flexibility parameters, and business continuity plans. The price and operating system differences she testified about are not relevant to the more holistic question of whether a competing product is a potential substitute.

Additionally, Amazon's argument that Nokia's requested relief "harms competitive conditions" because "Nokia engages in patent hold-up as a non-practicing-entity" is not relevant to whether there are "reasonable substitutes for devices subject to the exclusion order in terms of features, price points, and other pertinent factors." Amazon Br. at 100–101 and Amazon Reply at 76–78 ("[h]old-up and extortion are not in the public interest")."

The evidence supports that the requested remedial orders will not adversely affect competitive conditions in the United States economy.

C. Production of Like or Directly Competitive Articles in the United States

The evidence does not support that the requested relief would harm the production of like or directly competitive products in the United States. Amazon admits that "the requested relief may not directly impact U.S. production of competitive articles." Amazon Br. at 101. Indeed, the evidence supports that all of Amazon's accused products are made overseas. Amazon Importation Stipulation at ¶¶ 2–6. As a result, U.S. production would not be harmed by the requested relief.

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The evidence supports that the requested relief will not adversely affect the production of like or directly competitive articles in the United States.

D. United States Consumers

The evidence supports that excluding the Amazon accused products from the U.S. market would not meaningfully impact U.S. consumers because they would continue to have access to a wide variety of alternatives. As discussed above, there are numerous competitive alternatives to the accused products available today in the United States. The evidence supports that there is a sufficient supply of products to meet any demand that may result because of an exclusion order.

Amazon contends that the Staff "mistakenly contends" that Amazon "did not identify any unique features that cannot be obtained from other devices," and that Amazon "detailed uses, functionality, and unique features such as Alexa, parental control and child-appropriate educational features for tablets, voice and vision-controlled accessibility for tablets and Echo Shows critical for those with disabilities, smart home integration, unparalleled security and software patching and battery life for cameras, and price points to make premium products available to all as to all Accused Products." Amazon Reply at 80–81. However, although Amazon describes the accused products as having "unique" features, Amazon does not identify any that cannot be obtained with other devices. *Id.* The mere reduction of consumer surplus is an insufficient basis for not issuing an exclusion order for the same reasons that constriction of consumer choice is an insufficient basis. *Certain Personal Data and Mobile Communications Devices and Related Software*, Inv. No. 337-TA-710, Comm'n. Op. at 69 (Dec. 9, 2011) (EDIS Doc. ID 467457) (stating that the "right to exclude under a patent, 35 U.S.C. § 154, is the right to exclude a competitor's products; such exclusion necessarily affects consumer choice. Accordingly, the mere constriction of choice cannot be a sufficient basis for denying the issuance of an exclusion

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order."). The same is true regarding "interconnected products." Amazon cites no precedent, nor does it identify evidence of any interconnected products that would be affected, that indicates this is a legitimate reason not to issue a remedy.

The evidence supports that the consideration of U.S. consumers does not weigh in favor of denying relief.

E. Standard Essential Patents

Amazon contends that "[i]ssuing injunctive relief for RAND-encumbered patents undermines the public interest by reducing investment in standard-compliant products, raising prices, reducing choice, and decreasing investment into technology complementing these standards." Amazon Br. at 102–113 and Amazon Reply at 73–77. While breach of a RAND obligation has been considered in evaluating public interest, Amazon has not demonstrated such a breach here, and section 337 does not specifically preclude a remedy when standard essential patents are asserted. I agree with the Staff that consistent with Commission precedent and on the facts here, there is no public interest concern with respect to issuing a remedy encompassing the asserted standard essential patent claims, *i.e.*, the asserted decoding claims. Staff Reply at 13–16 and Staff Br. at 97–102.

XII. RECOMMENDED DETERMINATION ON REMEDY AND BOND

The Commission has broad discretion in selecting the form, scope, and extent of any remedy. *Viscofan, S.A. v. Int'l Trade Comm'n,* 787 F.2d 544, 548 (Fed. Cir. 1986); *see also Hyundai Electronics Industries Co. Ltd. v. Int'l Trade Comm'n*, 899 F.2d 1204, 1209 (Fed. Cir. 1990). By Commission rule, the administrative law judge must issue a recommended determination on the appropriate remedy if the Commission finds a violation of section 337 and

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on the amount of bond to be posted by respondents during Presidential review of any Commission remedy. *See* 19 C.F.R. § 210.42(a)(1)(ii). I address these issues below.

A. Limited Exclusion Order

Section 337(d)(1) provides that "[i]f the Commission determines, as a result of an investigation under this section, that there is a violation of this section, it shall direct that the articles concerned, imported by any person violating the provision of this section, be excluded from entry into the United States, unless, after considering the [public interest], it finds that such articles should not be excluded from entry." 19 U.S.C. § 1337(d)(1). The Commission is required to issue an exclusion order upon the finding of a section 337 violation absent a finding that the effects of any of the statutorily-enumerated public interest factors counsel otherwise. *Spansion*, 629 F.3d at 1358.

Nokia and the Staff argue that the Commission should issue a limited exclusion order covering all infringing products imported, sold for importation, and/or sold after importation by Amazon. Nokia Br. at 106–08 and Staff Br. at 80–83. Amazon contends that if the Commission issues a limited exclusion order, it should include a warranty and repair exception and a certification provision. Amazon Reply at 93–95. Nokia does not address these specific issues. Nokia Br. at 106–108 and Nokia Reply at 89–91. The Staff supports both requests. Staff Br. at 80–81. The evidence supports that Amazon accused products have warranty provisions. RX-0631C; RX-0695C; RX-0949–950; RX-1327–1328; RX-1344; RX-1353–1362; CX-0047; and CX-0050. I therefore recommend that any limited exclusion order include a warranty and repair exception.

Consistent with Commission practice, I also recommend the standard certification provision in any limited exclusion order such that, at the discretion of Customs and Border Patrol and pursuant to procedures it establishes, persons seeking to import articles that are potentially

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subject to any limited exclusion order may be required to certify that they are familiar with the terms of the limited exclusion order, that they have made appropriate inquiry, and thereupon state that, to the best of their knowledge and belief, the products being imported are not excluded from entry under the limited exclusion order.

Amazon also contends that "any remedy should be delayed to (1) permit a judicial, binding determination of an appropriate RAND rate; (2) permit appeal of any finding of unpatentability by the PTAB; and/or (3) permit Respondents an opportunity to develop alternative, non-infringing products." Amazon Reply at 93–95. Nokia and the Staff disagree. Nokia Br. at 106–108 and Staff Br. at 81–83. I disagree with Amazon's unsupported request for an indeterminate period of delay. Amazon has not identified any "alternative, non-infringing products" and also ignores the impact of its continued importation and sale of infringing products during an unknowable period of delay waiting for a judicial determination and/or PTAB decisions. Amazon provided no legal support for its requested delay, which could potentially last years.

If the Commission determines that there is a violation of section 337, I recommend that the Commission issue a limited exclusion order barring entry of Amazon products that infringe claims 1, 7, 10, 16, 21, 22, 29, 40, and 48 of the '808 patent including a warranty and repair provision and the standard certification provision.

B. Cease and Desist Order

Section 337(f)(1) provides that in addition to, or in lieu of, issuance of an exclusion order, the Commission may issue a cease and desist order as a remedy. 19 U.S.C. § 1337(f)(1). A cease and desist order is generally issued when a respondent maintains commercially significant inventories in the United States or has significant domestic operations that could undercut the remedy provided by an exclusion order. *Certain Table Saws Incorporating Active Injury*

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Mitigation Technology and Components Thereof, Inv. No. 337-TA-965, Comm'n Op. at 4–6 (Feb. 1, 2017) (EDIS Doc. ID 602496). "A complainant seeking a cease and desist order must demonstrate, based on the record, that this remedy is necessary to address the violation found in the investigation so as to not undercut the relief provided by the exclusion order." *Id.* at 5.

Nokia contends that "Amazon has significant domestic operations and maintains commercially significant inventory of Amazon Accused Products." Nokia Br. at 109. The Staff agrees. Staff Br. at 85 ("the evidence showed that Amazon maintains a commercially significant inventory and has significant domestic operations," "Amazon also has a very large network in the United States, where a vast number of products are delivered in two days – and sometimes in as little as the same day," and "[t]hese short delivery times demonstrate that it is more likely than not there is a significant inventory of Amazon Accused Products in the United States"). Amazon disagrees and contends that "Nokia did not meet its burden to demonstrate that a CDO is 'necessary to address' any violation beyond an exclusion order" and that "Nokia also failed to show commercially-significant inventories." Amazon Reply at 92–93.

I agree with Nokia and the Staff the evidence supports that Amazon maintains a commercially significant inventory and has significant domestic operations. As contended by Nokia and the Staff, Amazon has significant domestic operations and maintains commercially significant inventory of its accused products. Amazon had over [redacted] as of [redacted] and over [redacted] as of [redacted], averaging [redacted] of its accused products based on sales. Herrington Tr. at 319:21–323:18; CX-0218C–CX-0222C (inventory spreadsheets); CX-0409–CX-0412 (Amazon facilities); CX-2717C (forecasts); and CX-4573C (fulfillment codes). Amazon's scattershot arguments that a few products that have been discontinued, are demos, or refurbished, does not diminish the substantive evidence presented by

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Nokia. Amazon Reply at 92–93. Accounting for the items identified by Amazon, Mr. Herrington testified that [redacted] and did not "have a significant impact" on his opinion. Herrington Tr. at 323:2–14.

I therefore recommend issuance of a cease and desist order against Amazon if the Commission concludes that there has been a violation of section 337.

C. Bond During Presidential Review

When the Commission enters an exclusion order or a cease and desist order, a respondent may continue to import and sell its products during the 60-day Presidential review period under an amount determined by the Commission to be "sufficient to protect the complainant from any injury." 19 U.S.C. § 1337(j)(3); *see also* 19 C.F.R. § 210.50(a)(3); and *Automated Put Walls*, Inv. No. 337-TA-1293, Comm'n Op. at 46. Nokia bears the burden of establishing the need for a bond. *Id.* at 47.

When reliable price information is in the record, the Commission often sets the bond by eliminating the differential between the domestic product and the imported product. *Id.* at 46. The Commission may also use a reasonable royalty rate to set the bond amount where one can be determined from the record. *Id.* Where the record establishes that the calculation of a price differential is impractical or there is insufficient evidence in the record to determine a reasonable royalty, the Commission has imposed a 100 percent bond. *Id.*

The entirety of Nokia's argument on bond is:

> A bond is necessary in this Investigation to protect Nokia and its licensees from injury. The continued importation and sale of the Accused Products harms Nokia through lost licensing revenue, and Nokia's licensees are harmed by lost market share. As detailed herein, Nokia proved that the rate should be based on the

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> established royalty of €0.60 per unit. In fairness, Respondents should have to pay the same well-established rate as Nokia's numerous licensees.

Nokia Br. at 110.

Amazon contends that "Nokia fails to establish that a bond is necessary," that "Nokia does not compete" with Amazon and "presents no evidence of injury, requiring a bond rate of zero," and that Nokia failed "to establish that its proposed reasonable royalty of €0.60/unit is appropriate" because that rate, among other things, "is based on Nokia's entire portfolio when only two patents are asserted here." Amazon Reply at 95–96. The Staff agrees with Amazon. Staff Br. at 86–87 ("Nokia has presented no evidence that they have products that compete with Amazon").

I agree with Amazon and the Staff that there are no Nokia products that compete with Amazon accused products and the record does not support that €0.60/unit is a reasonable royalty for the two asserted patents. Because Nokia has not carried its burden of establishing a need for a bond, it is my recommendation that the Commission set a 0% bond for any importations of infringing Amazon accused products during the Presidential review period if it finds a violation.

XIII. INITIAL DETERMINATION ON VIOLATION

It is my initial determination that a violation of section 337 of the Tariff Act, as amended, has occurred by the importation into the United States, the sale for importation, or the sale within the United States after importation of certain video capable electronic devices, including computers, streaming devices, televisions, cameras, and components and modules thereof based on infringement of U.S. Patent No. 7,532,808. I hereby certify this Initial Determination and Recommended Determination to the Commission.

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The Secretary shall serve the confidential version of this Initial Determination and Recommended Determination upon counsel who are signatories to the Protective Order (Order No. 1) issued in this investigation. A public version will be served on all parties of record later.

Under 19 C.F.R. § 210.42(h), this Initial Determination shall become the determination of the Commission unless a party files a petition for review under 19 C.F.R. § 210.43(a) or the Commission orders on its own motion a review of the Initial Determination or certain issues therein under 19 C.F.R. § 210.44. 19 C.F.R. § 210.42(d).

XIV. ORDER

Within seven days of the date of this document, the parties shall jointly submit a single proposed public version of this document with any proposed redactions indicated in red. If the parties submit excessive redactions, they may be required to provide declarations from individuals with personal knowledge, justifying each proposed redaction and specifically explaining why the information sought to be redacted meets the definition for confidential business information set forth in 19 C.F.R. § 201.6(a). To the extent possible, the proposed redactions should be made electronically in a single PDF file with the proposed redactions submitted as "marked" but not yet "applied." The proposed redactions should be submitted via email to JohnsonHines1379@usitc.gov and not filed on EDIS.

SO ORDERED.

Doris Johnson Hines
Administrative Law Judge