

➤PUBLIC VERSION◀

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

**In the Matter of**

**CERTAIN AUDIOVISUAL  
COMPONENTS AND PRODUCTS  
CONTAINING THE SAME**

**Inv. No. 337-TA-837**

**COMPLAINANTS LSI CORPORATION AND AGERE SYSTEMS LLC'S  
BRIEF IN RESPONSE TO NOTICE OF COMMISSION DETERMINATION  
TO REVIEW FINAL INITIAL DETERMINATION FINDING A  
VIOLATION OF SECTION 337 IN ITS ENTIRETY**

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## I. INTRODUCTION

Pursuant to the Notice of Commission Determination to Review a Final Initial Determination Finding a Violation of Section 337 in its Entirety (“Commission’s Notice”), Complainants LSI Corporation (“LSI”) and Agere Systems LLC (“Agere”) (collectively, “Complainants” or “LSI/Agere”) respectfully submit this brief responding to the issues set forth in the Commission’s Notice.

## II. QUESTION 1

*What evidence in the record supports or does not support the conclusion that the two DRAMs in each of the Funai products accused of infringing the ‘087 patent is a single memory having one or more memory chips? With respect to each of the Funai products accused of infringing the ‘087 patent, what evidence in the record supports or does not support the conclusion that the two DRAMs used by the transport logic, MPEG decoder and system controller function as a unit? To the extent that each Funai product includes a flash memory, what code and/or data is stored in the flash memory and does the flash memory function as a unit with the two DRAMs?*

### A. **Each of the Funai Products Accused of Infringing the ‘087 Patent Includes a Single Memory Having One or More Memory Chips.**

The record evidence regarding Funai’s infringement of U.S. Patent No. 5,870,087 (“the ‘087 Patent”) makes clear that what constitutes a “single memory” depends on the functional coordination of memory pieces of the video decoder system, rather than the physical arrangement of those pieces. For instance, the ‘087 Patent discloses that a single memory 212 may be an amalgamation of four different memory pieces. In particular FIG. 3, reproduced below, of the ‘087 Patent depicts single unified memory 212 as a memory configuration of four ranks.





CX-0613C ( [REDACTED] Service Manual) at 29 (emphasis added). Further confirmation comes from the fact that [REDACTED] [REDACTED]. *See id.* The combination of [REDACTED] [REDACTED] [REDACTED] indicates that the DRAMs constitute a single memory [REDACTED]. *See id.*

As a single memory, the DRAMs function as a unit in supporting the transport logic, video decoder, and system controller functions of the video decoder system. Indeed, as set forth in greater detail below, the source code for each of the Funai products accused of infringing the ‘087 Patent confirms that each of the products [REDACTED]

██████████ and the DRAMs function as a unit during the operation of the video decoder systems, thus infringing the asserted claims of the ‘087 Patent.

**B. The DRAMs Function as a Unit to Support the Transport Logic, Video Decoder, and System Controller Functions in the Accused Funai Products.**

The record evidence amply supports a finding that ██████████ DRAMs in each of the Funai products accused of infringing the ‘087 Patent constitute a single memory having one or more memory chips and that the two DRAMs used by the transport logic, MPEG decoder and system controller function as a unit.

The evidence indicates that during video decoder operation ██████████  
██████████. JX-0018C (██████████ Deposition Designations) at 32:10-13  
(“██████████  
██████████”). As Dr. Acton testified at the evidentiary hearing, by analyzing the source code, one can “understand how memory is addressed, whether it functions as a unit, and how the various components, the decoder, the demultiplexer, and the system controller interact.” Acton, Tr. 534:8-12. Thus, in order to determine whether the multiple DRAMs function as a unit in the MPEG decoder systems, Dr. Acton carefully and exhaustively analyzed the relevant source code for the Funai ██████████ Products, the Funai ██████████ Products, the Funai ██████████ Products, and the Funai ██████████ Products. *See* CX-1594C (Acton DWS) at 28-115. In particular, Dr. Acton analyzed the source code for each of the Funai products accused of infringing the ‘087 Patent to determine how the video decoder system utilized the DRAMs and whether the video decoder system uses one memory addressing mechanism for the claimed transport logic, MPEG decoder and system controller functions. *See id.* at 585:7-9 (“So memory functioning as a unit is essentially addressed under one addressing mechanism and operates as whole.”). As discussed in greater detail below, the source code for

each of the Funai products accused of infringing the '087 Patent conclusively demonstrates that [REDACTED] DRAMs function as a unit to support the transport logic, MPEG decoder and system controller functions of the video decoder systems in each of the accused Funai products. Acton, Tr. 552:5-8 (“I have looked at the code and how memory is addressed, especially with respect to demultiplexing and I see a memory function as a unit.”).

### 1. Funai [REDACTED] Products

The ALJ’s determination that “[e]ach of the Funai [REDACTED] Products (*i.e.*, the [REDACTED]) includes an MPEG decoder system, which includes a single memory for use by transport, decode, and system controller functions, by including either an [REDACTED] or [REDACTED] video decoder chip” finds convincing support in the record. ID at 36. For instance, with respect to the transport logic, Dr. Acton testified that “[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]” CX-1594C (Acton DWS) at 39.<sup>1</sup> During demultiplexing, [REDACTED]

[REDACTED]

[REDACTED]. *Id.* The fact that [REDACTED] DRAMs are used for this functionality, when the same functionality could utilize a single DRAM, indicates “[REDACTED]

[REDACTED].” *Id.* Furthermore, the source code indicates that “[REDACTED]

[REDACTED]

[REDACTED]” *Id.* at 44.

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<sup>1</sup> The source code discussed with respect to the Funai [REDACTED] products may be found at CX-0559C ([REDACTED] Source Code) at [REDACTED]\_SC0000094-96, 155, 163, 171-73, 179-87, 190, 192, 194-99, 209-10, 225-27, 231-32, 253-56, 268, 272-74, 278, 284, 295-302, 1934-47, 1955, and 1964-72.

In addition to utilizing the DRAMs in the demultiplexing operation, the Funai [REDACTED] Products also use the DRAMs for MPEG decoder and system controller functions. With regard to decoder, the evidence in the record indicates that “[REDACTED]

[REDACTED]” *Id.* at 44. “[REDACTED]

[REDACTED]” *Id.* As for the system controller, “[REDACTED]

[REDACTED].” *Id.* at 45.

In view of the foregoing, the record is clear that the source code for the video decoder system [REDACTED] for the transport logic, MPEG decoder, and system controller functions. *See* CX-1594C (Acton DWS) at 28-60. Specifically, the source code [REDACTED]

[REDACTED] *See id.* at 39; JX-0018C ([REDACTED] Deposition Designations) at 32:10-13.

Notably absent from the source code (and the evidentiary record) is any indication that the video decoder system treats [REDACTED] DRAMs as distinct (*i.e.*, non-unified) memories. As discussed above, if the DRAMs did not function as a unit, the source code and product schematics would indicate as much. For example, the source code would contain overlapping addressing schemes for [REDACTED] DRAMs, treat [REDACTED] DRAMs as an input/output device for only one of the transport logic, video decoder or system controller, or provide for direct memory access to a particular device. The fact that the source code [REDACTED]

[REDACTED]

[REDACTED], provides irrefutable evidence that the DRAMs function as a unit. In other words, the source code explicitly shows that [REDACTED] the DRAMs to function as a unit. Acton, Tr. 552:5-8 (“I have looked at the code and how memory is addressed, ... and I see a memory function as a unit.”).

## 2. Funai [REDACTED] Products

The evidence in the record fully supports the ALJ’s determination that “[e]ach of the Funai [REDACTED] Products (*i.e.*, the [REDACTED]) includes an [REDACTED] video decoder and a unified memory for use by transport, decode and system controller functions.” ID at 37. Furthermore, the evidence substantiating the ALJ’s finding for the Funai [REDACTED] products is similar to the evidence supporting the infringement finding regarding the Funai [REDACTED] Products.

In the Funai [REDACTED] Products, the DRAMs function as a unit in supporting the transport logic, video decoder, and system controller functions of the video decoder system. For example, during video decoding operations, [REDACTED] [REDACTED].<sup>2</sup> CX-1594C (Acton DWS) at 80-81. Additional “[REDACTED].” *Id.* at 82. During demultiplexing, the DRAMs are used by the transport logic. “For instance, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]” *Id.*

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<sup>2</sup> The source code discussed with respect to the Funai [REDACTED] products may be found at CX-0559C ([REDACTED] Source Code) at [REDACTED]\_SC00001863-67, 1871, 1874, 1880-83, 1888-93, 1895-98, 1900-22, and 1931-33.

The system controller also uses the DRAMs during system control functions.

For example,

[REDACTED]

*Id.*

As with the Funai [REDACTED] Products, the source code for the Funai [REDACTED] Products includes [REDACTED]. Because [REDACTED], *see* JX-0018C ([REDACTED] Deposition Designations) at 32:10-13, the absence in the record of any evidence that the source code for the Funai [REDACTED] Products includes different addressing mechanisms or schemes for each of the DRAMs confirms that the DRAMs function as a unit to support the transport logic, video decoder, and system controller functions during video decoding operations. Indeed, the source code is clear that “[e]ach of the Funai [REDACTED] Products includes an [REDACTED] video decoder and a unified memory for use by transport, decode and system controller functions.” CX-1594C (Acton DWS) at 77.

### 3. Funai [REDACTED] Products

Similar to the Funai [REDACTED] and Funai [REDACTED] Products, the source code for the Funai [REDACTED] Products [REDACTED] such that the DRAMs function as a unit during video decoder operations. For instance, Dr. Acton stated:

With respect to the MPEG decoder,

[REDACTED]

For system controller functions,

[REDACTED]

Regarding the transport logic, [REDACTED]

CX-1594C (Acton DWS) at 93.<sup>3</sup> The evidence also indicates that the source code [REDACTED]

[REDACTED]. *Id.*

Furthermore, [REDACTED]

[REDACTED]. *Id.* at 94. Thus, the source code for the Funai [REDACTED]

Products [REDACTED] DRAMs, which is indisputable evidence that [REDACTED] DRAMs used by the transport logic, video decoder, and system controller function as a unit.

#### 4. Funai [REDACTED] Products

Overwhelming evidence supports the ALJ’s determination that “[e]ach of the Funai [REDACTED] Products (*i.e.*, the [REDACTED] [REDACTED]) includes a single memory for use by transport, decode and system controller functions.” ID at 38. For instance, with respect to how the DRAMs are utilized during operation of the video decoder system, Dr. Acton testified:

[REDACTED]

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<sup>3</sup> The source code discussed with respect to the Funai [REDACTED] Products may be found at CX-0587C (Funai Source Code) at FUNAI-ITC837-SC-00000398-506.

CX-1594C (Acton DWS) at 103.<sup>4</sup> The source code makes clear that each of the transport logic, video decoder, and system controller utilize the DRAMs during operation of the video decoder system, and that [REDACTED].

As with the other Funai products accused of infringing the '087 Patent, [REDACTED] [REDACTED] DRAMs. In fact, as discussed above, the service manual for the [REDACTED] product depicts [REDACTED] [REDACTED] [REDACTED]. CX-0613C ([REDACTED] Service Manual) at 29. Therefore, all of the record evidence, from source code to hardware schematics to expert testimony, indicates that [REDACTED] DRAMs used by the transport logic, MPEG decoder and system controller function as a unit, and thus the Funai [REDACTED] Products also infringe the asserted claims of the '087 Patent.

**C. The Flash Memory Is Not Part of the Unified Memory of the Video Decoder System.**

The flash memory included in each of the Funai products accused of infringing the '087 Patent is not part of the unified memory of the video decoder system. The record evidence indicates that the flash memory [REDACTED] [REDACTED] [REDACTED]. JX-0018C ([REDACTED] Deposition Designations) at 38:15-39:6; Acton, Tr. at 543:14-16 (“[REDACTED] [REDACTED]”). The service manuals for the Funai products accused of infringing the '087 Patent

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<sup>4</sup> The source code discussed with respect to the Funai [REDACTED] Products may be found at CX-0587C (Funai Source Code) at FUNAI-ITC837-SC-00000102-06, 120-25, 132, 141-53, 157, 161-69, 172-74, 176-77, 182-90, 197-201, 268-72, 291, 324, 328-30, 336, 374, 376-77, 381, 384-87, 389-92, and 395-97.

provide corroborating evidence that the flash memory [REDACTED]

[REDACTED]. For instance, the service manual for the Funai [REDACTED] product [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

CX-0613C ([REDACTED] Service Manual) at 29 (emphasis added). The [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]. See JX-0018C ([REDACTED] Deposition Designations) at 38:15-

39:6; Acton, Tr. at 543:14-16. In sum, record evidence indicates that the flash [REDACTED]

[REDACTED] the flash does not function as a unit with [REDACTED]

DRAMs.

The fact that the Funai products accused of infringing the ‘087 Patent include additional memory pieces that are separate and apart from the unified memory utilized by the video decoder system is consistent with the disclosure of the ‘087 Patent, which describes use of an on-chip memory that is not part of the unified memory. *See* JX-0001 (‘087 Patent) at 12:52-54. The ‘087 Patent also discloses use of external storage systems that are not part of the unified memory. In particular, the ‘087 Patent discloses that

the computer system includes at least one processor 80 coupled through chipset logic 82 to a system memory 84. The chipset 82 preferably includes a PCI (Peripheral Component Interconnect) bridge for interfacing to the PCI bus 86, or another type of bus bridge for interfacing to another type of expansion bus. In FIG. 2, MPEG decoder 74 and MPEG encoder 76 are shown connected to PCI bus 86. Various other components may be comprised in the computer system, such as video 88 and *hard drive* 90.

JX-0001 (‘087 Patent) at 6:67-7:9 (emphasis added). Thus, the presence of a separate, non-unified memory such as the flash memory in the accused Funai products is expressly contemplated by the ‘087 Patent.

### III. QUESTION 2

*What record evidence supports or does not support finding direct infringement by a third party user of each of the Funai products accused of infringing claims 10 and 11 of the ‘087 patent?*

“It is hornbook law that direct evidence of a fact is not necessary. Circumstantial evidence is not only sufficient, but may also be more certain, satisfying and persuasive than direct evidence.” *Moleculon Research Corp. v. CBS, Inc.*, 793 F.2d 1261, 1272 (Fed. Cir. 1986) (internal quotation and citation omitted). In this investigation, there is sufficient circumstantial evidence to support a finding of direct infringement of Claims 10 and 11 of the ‘087 Patent by a third party user of the accused Funai products.

It is uncontroverted that Funai has made extensive sales in the United States of the Funai products accused of infringing the '087 Patent. *See* CX-0713C (Funai 2010-2011 Sales); CX-0714C (Funai 2010-2011 Sales). Dr. Acton testified that based on how these accused products are configured “it is not possible to use [the] video decoder system in each of these products without infringing Claims 10 and 11 of the '087 Patent.” CX-1594C (Acton DWS) at 115. In addition, Funai has provided user manuals instructing the end user how to use the accused products. *Id.* at 116-17. If the user runs into technical difficulties, Funai provides customer support to facilitate the proper (and infringing) use of the Funai products accused of infringing the '087 Patent. *Id.* at 117. The evidence further indicates that since at least [REDACTED], Funai has had knowledge of the '087 Patent and has continued to provide the user manuals and customer support for the products accused of infringing the '087 Patent. *See* CX-1145C ([REDACTED]); [REDACTED]; CX-1594C (Acton DWS) at 117.

The Federal Circuit has held on multiple occasions that evidence of (1) extensive sales of the accused products, (2) dissemination of instruction manuals, and (3) corroborating expert testimony is sufficient to support a finding of direct infringement. *Moleculon Research Corp. v. CBS, Inc.*, 793 F.2d 1261, 1272 (Fed. Cir. 1986); *Lucent Technologies, Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1319 (Fed. Cir. 2009); *cf. i4i Ltd. Partnership v. Microsoft Corp.* 598 F.3d 831, 850 (Fed. Cir. 2010) (finding that expert testimony, in addition to a joint stipulation and interrogatory responses confirming a particular use of the accused products, were sufficient for a finding of direct infringement). The fact that there may be contrary expert testimony does not diminish the sufficiency of the evidence. *i4i Ltd.*, 598 F.3d at 848 (“[T]he jury was free to disbelieve [defendant’s] expert, who relied on the S4 user manual, and credit [plaintiff’s] expert”). As discussed above, the record in the present investigation contains evidence of extensive sales of

the accused products, Funai's distribution of instruction manuals and provisioning of customer support with knowledge of the '087 Patent, and Dr. Acton's expert testimony that the accused Funai products could not be used by an end user without infringing Claims 10 and 11 of the '087 Patent. In the aggregate, this evidence is more than sufficient to support a finding of direct infringement by a third party user of each of the Funai products accused of infringing Claims 10 and 11 of the '087 Patent.

#### IV. QUESTION 3

*Please discuss and cite the record evidence, if any, that shows Funai actively and knowingly aided and abetted another's direct infringement of claims 10 and 11 of the '087 patent.*

The record evidence shows that Funai has and continues to actively aid and abet the direct infringement of Claims 10 and 11 of the '087 Patent. Indisputably, Funai has had knowledge of the '087 Patent since at least [REDACTED] and yet has continued to encourage customers to use the MPEG decoder systems incorporated in each of the devices. *See* CX-1594C (Acton DWS) at 115. Again, based on how the devices are constructed, it is not possible to use video decoder systems in each of these products without infringing Claims 10 and 11 of the '087 Patent. *See id.* Funai produces marketing documents and product manuals that describe features of these devices, include detailed instructions on how to properly use the described device, and provide information on how to contact technical support if additional help or instructions are necessary. *See id.* at 116. For example, Exhibit CX-0609 ([REDACTED] Brochure) states that “[i]t is fully future proof as it supports 1080p signals from all sources, including the most recent like Blu-ray and advanced HD game consoles” and that it supports “Playback Formats: MP3, JPEG Still pictures, MPEG1, MPEG2, AVI, WMV9, VC1, H.264, MPEG4 SP/ASP.” CX-0609 ([REDACTED] Brochure) at 2-3. Likewise, Exhibit CX-0124 ([REDACTED] Brochure) touts features

such as “Blu-ray Disc playback” and “BD-Live (Profile 2.0),” and identifies supported compression features such as “MPEG2.” CX-0124 ( [REDACTED] Brochure).

The record evidence shows that Funai also creates and distributes product manuals for the Funai Products that provide instructions as to how to set-up and operate their products. *See* CX-1594C (Acton DWS) at 116. These instructions include details on how to play video streams that utilize the infringing video decoding processes. CX-0046 ( [REDACTED] User Manual) is the User Manual for [REDACTED] product and CX-0056 ( [REDACTED] User Manual) is the User Manual for the [REDACTED] product. *See* CX-0046 ( [REDACTED] User Manual) and CX-0056 ( [REDACTED] User Manual). These are examples of the documents Funai produces that guide users through the steps needed to operate the video decoder systems, and thus infringe the ‘087 Patent. *See* CX-1594C (Acton DWS) at 116-17. In these manuals, Funai also provides and/or arranges for the provision of technical support to ensure that end users are able to operate all features of the Funai Products, including video playback. *See id.* at 117. This technical support often is made available through a website, which is accessible in the United States, as well as through a U.S. Customer Support Line. *See id.* Funai also provides warranty support for the Funai Products in the event that a device is unable to perform an intended feature. *See id.* Again, these activities collectively aid and abet end users in directly infringing the asserted claims of the ‘087 Patent. *See id.*

The record evidence shows that Funai provided these materials to customers with knowledge of the ‘087 Patent. *See id.* at 117. Indeed, Funai has been aware of the ‘087 Patent since as early as [REDACTED]. CX-1145C ( [REDACTED] ). Given this knowledge, Funai knew its actions would aid end users in directly infringing the ‘087 Patent, and

thus Funai aided and abetted the direct infringement of its devices by these end users. *See* CX-1594C (Acton DWS) at 117.

**V. QUESTION 4**

*Please discuss and cite the record evidence, if any, of how a person of ordinary skill in the art would interpret steps (A), (B), and (C) of claim 1 and elements (i), (ii) and (iii) of claim 11 of the ‘663 patent. Please also discuss how such record evidence shows or does not show that each step and element are or are not met literally and/or under the doctrine of equivalents by each of the accused Funai products containing [REDACTED] decoders.*

When viewed from the perspective of one of ordinary skill in the art, the accused Funai products containing [REDACTED] decoders perform each of steps (A), (B), and (C) of Claim 1 and satisfy elements (i), (ii), and (iii) of Claim 11 of U.S. Patent No. 6,982,663 (“the ‘663 Patent”).

**A. Step (A) of Claim 1 of the ‘663 Patent Is Practiced and Element (i) of Claim 11 of the ‘663 Patent Is Satisfied by the [REDACTED] Decoders in Certain Accused Funai Products.**

The [REDACTED] decoders used in certain accused Funai products both practice step (A) of Claim 1 and satisfy element (i) of Claim 11 of the ‘663 Patent. For instance, the language of step (A) of Claim 1 simply requires:<sup>5</sup>

(A) setting said index value to a threshold in response to a first portion of said codeword having a first pattern;

*See* JX-0007 (‘663 Patent) at col. 7, lns. 33-34. This is not a complicated claim element. And one of ordinary skill in the art would not interpret this element to have any additional limitations or restrictions beyond what the plain language requires. All step (A) requires is a simple *cause* (*i.e.*, “a first portion of said codeword having a first pattern”) and *effect* (*i.e.*, “setting said index value to a threshold”). Importantly, there is nothing in the express language of step (A) that

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<sup>5</sup> Although Claim 1 specifically is discussed in this Section, the analysis of how one of ordinary skill in the art would interpret Claim 1 applies to the analogous element (i) of Claim 11 of the ‘663 Patent.

specifies or restricts in any way (i) how to determine if that cause has taken place; or (ii) how the effect is accomplished “in response to” the cause. Thus, the scope of the claim is broad enough to cover any method of detecting whether the codeword contains “a first portion of said codeword having a first pattern,” as well as any method of “setting said index value to a threshold” as a result of the first pattern being detected.

**1. The Source Code Proves that the [REDACTED] Decoders Practice Step (A) of Claim 1 and Satisfy Element (i) of Claim 11 of the ‘663 Patent.**

The [REDACTED] source code<sup>6</sup> proves that the [REDACTED] decoders used in certain accused Funai products practice step (A) of Claim 1 and satisfy element (i) of Claim 11 of the ‘663 Patent. *See* CX-1597C (Reinman DWS) at 92-93, Q&A 263, 279.

As found by the ALJ, [REDACTED]

[REDACTED]

[REDACTED]. *See* ID at 141; CX-

1597C (Reinman DWS) at Q&A 263, 279; CX-0559C ([REDACTED] Source Code) at

[REDACTED]\_SC0000394, [REDACTED] [REDACTED] [REDACTED]\_SC0000618,

lines 5761-62 ([REDACTED] The detection of the “first pattern” [REDACTED]

[REDACTED] ID at 141 n.37; CX-1597C (Reinman DWS) at Q&A 263, 279; *see* CX-

0559C ([REDACTED] Source Code) at [REDACTED]\_SC0000394, [REDACTED]

[REDACTED] [REDACTED]\_SC0000619, [REDACTED] [REDACTED] [REDACTED]

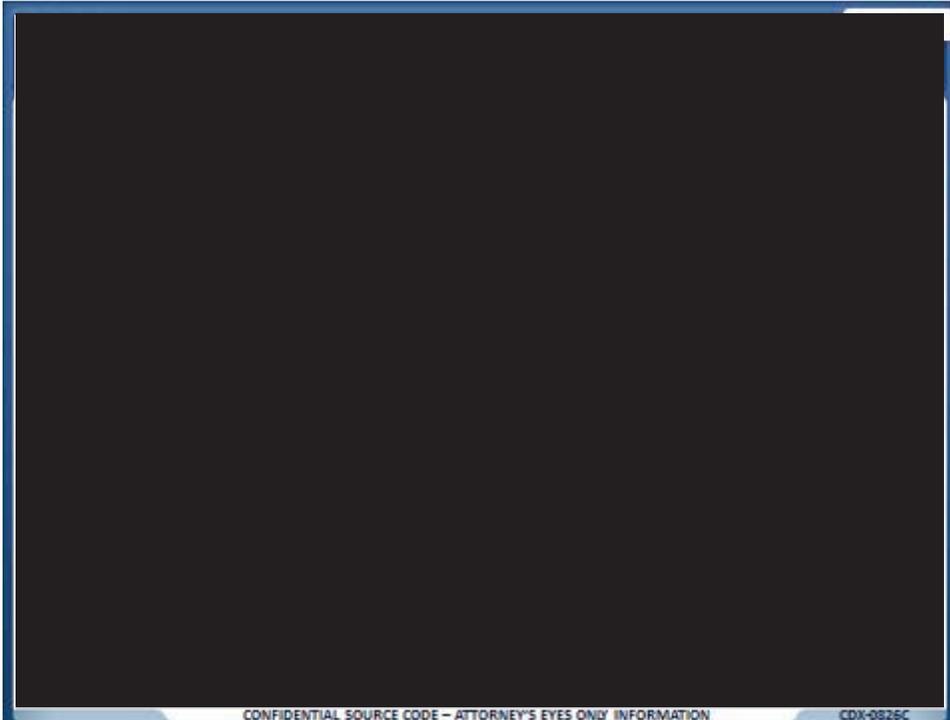
[REDACTED] CX-0559C ([REDACTED] Source

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<sup>6</sup> As the ALJ correctly found, [REDACTED] in the accused Funai products (the [REDACTED]), and the source code [REDACTED] is nearly identical. ID at 140; CX-1597C (Reinman WS) at Q&A 257-58. As such, although [REDACTED] decoders are discussed herein, an analysis of the source code for any one of those decoders applies equally for analogous portions of the source code for the other decoders. *See* ID at 140; CX-1597C (Reinman WS) at Q&A 259.

Code) at ██████████\_SC0000422 (██████████), and ██████████ in CX-0559C (██████████ Source Code) at ██████████\_SC0000643 (██████████ ID at 141-42 n.37; CX-1597C (Reinman DWS) at Q&A 263, 279.

Therefore, the index value ██████████ ultimately is set to the claimed “threshold” ██████████ ██████████ in CX-0559C (██████████ Source Code) at ██████████\_SC0000423 (██████████), and ██████████ in CX-0559C (██████████ Source Code) at ██████████\_SC0000643-644 (██████████ See ID at 141-42 n.37; CX-1597C (Reinman DWS) at Q&A 263, 279. Otherwise, the index value ██████████. See CX-1597C (Reinman DWS) at Q&A 263, 279. For the ██████████ products, this is shown in CDX-0826C (Reinman 027) (which is effectively identical to the code for the ██████████ products):



*See id.* As such, there can be no question that the claimed “index value” is set “to a threshold in response to a first portion of said codeword having a first pattern” in the ██████████ decoders

used in certain Funai accused products. Therefore, such decoders practice step (A) of Claim 1 and satisfy element (i) of Claim 11 of the '663 Patent.

**2. Funai's Arguments Improperly Attempt To Import New Restrictions and Limitations into Step (A) of Claim 1 and Element (i) of Claim 11.**

All of Funai's non-infringement arguments improperly attempt to import new restrictions and limitations into step (A) of Claim 1 and element (i) of Claim 11. As an initial matter, Funai does not dispute that the [REDACTED] decoders in question detect whether there is a leading "first pattern" in a given codeword and Funai cannot dispute that the claimed "index value" ultimately is assigned to a "threshold" value prior to detection of the claimed "second pattern" and "third pattern" from Claims 1 and 11. *See, e.g.*, RIB at 362-66. In other words, Funai does not dispute that the claimed cause and effect take place in the accused Funai products using [REDACTED] decoders.

Instead, Funai improperly attempts to import limitations into the plain language of the asserted claims. Specifically, Funai erroneously argues that Claims 1 and 11 somehow (i)

[REDACTED]  
[REDACTED]

*Id.* at 363-65. Yet there is nothing in the plain language of either Claim 1 or Claim 11 that

requires [REDACTED]

[REDACTED]. Nor is there anything in the plain language that precludes "setting said index value to a threshold" [REDACTED]. As such, one of ordinary skill in the art would understand Claim 1

and Claim 11 to be broad enough to encompass [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED].



because the length of each incoming codeword is not known in advance. Reinman, Tr. at 757:21-758:2.

Moreover, the specification also discloses that the claimed “codewords” containing a “fourth pattern” can vary from one bit to several bits in length – each ending with a zero, as seen in CDX-1165 below:

**“First” through “Fourth” Patterns** CDX-1165

Index	Unary Prefix	exp-Golomb Suffix
0	0	
1	10	
2	110	
...		
15	1...10	
16	1...110	0
17	1...110	1
18	1...1110	00
19	1...1110	01
20	1...1110	10
21	1...1110	11
22	1...11110	000
23	1...11110	001
24	1...11110	010
25	1...11110	011
26	1...11110	100
27	1...11110	101
...		

JX-0007 ('663 Patent) at 8  
CDX-1165

This disclosure of variable-length “fourth patterns” strongly suggests the use of a counter as the incoming codeword is being processed in order to track how the index value associated with the prospective “fourth pattern” increases with each incoming bit. As a result, the specification also necessarily supports – and under no circumstance precludes – “setting said index value to a threshold” by [REDACTED]

In summary, none of the limitations and restrictions Funai seeks to introduce into step (A) of Claim 1 and element (i) of Claim 11 of the ‘663 Patent has any support in the intrinsic

record. And given that Funai's entire non-infringement position is premised on such improper limitations and restrictions, the Commission should find that step (A) of Claim 1 literally is practiced and element (i) of Claim 11 literally is satisfied by the [REDACTED] decoders used in certain accused Funai products.<sup>7</sup>

**B. Step (B) and (C) of Claim 1 of the '663 Patent Are Practiced and Elements (ii) and (iii) of Claim 11 of the '663 Patent Are Satisfied by the [REDACTED] Decoders in Certain Accused Funai Products.**

The [REDACTED] decoders used in certain accused Funai products also practice steps (B) and (C) of Claim 1 and satisfy elements (ii) and (iii) of Claim 11 of the '663 Patent. These claim elements read, in pertinent part:

(B)/(ii) adding/add an offset to said index value based on a second pattern in a second portion of said codeword following said first portion in response to said first portion having said first pattern  
This is best seen in the source code for the [REDACTED] decoders;  
and

(C)/(iii) adding/add a value to said index value based on a third pattern in a third portion of said codeword following said second portion in response to said first portion having said first pattern.

As with step (A) of Claim 1 and element (i) of Claim 11, the source code proves that steps (B) and (C) of Claim 1 are practiced and elements (ii) and (iii) of Claim 11 are satisfied by each of the [REDACTED] decoders used in certain Funai accused products.

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<sup>7</sup> At minimum, step (A) is practiced and element (i) is satisfied under the doctrine of equivalents, as any alleged difference between setting the "index value" by [REDACTED] [REDACTED] is insubstantially different from any other approach that sets the index value to a threshold, as all such approaches necessarily perform substantially the same function (*i.e.*, assigning the index value to a "threshold" if a "first pattern" is detected) in substantially the same way (*i.e.*, by parsing the bit stream to detect a "first pattern," and if found, performing an action that results in the index value being assigned to the "threshold" value), with exactly the same result (*i.e.*, the index value has been assigned the "threshold" value because the "first pattern" was detected).

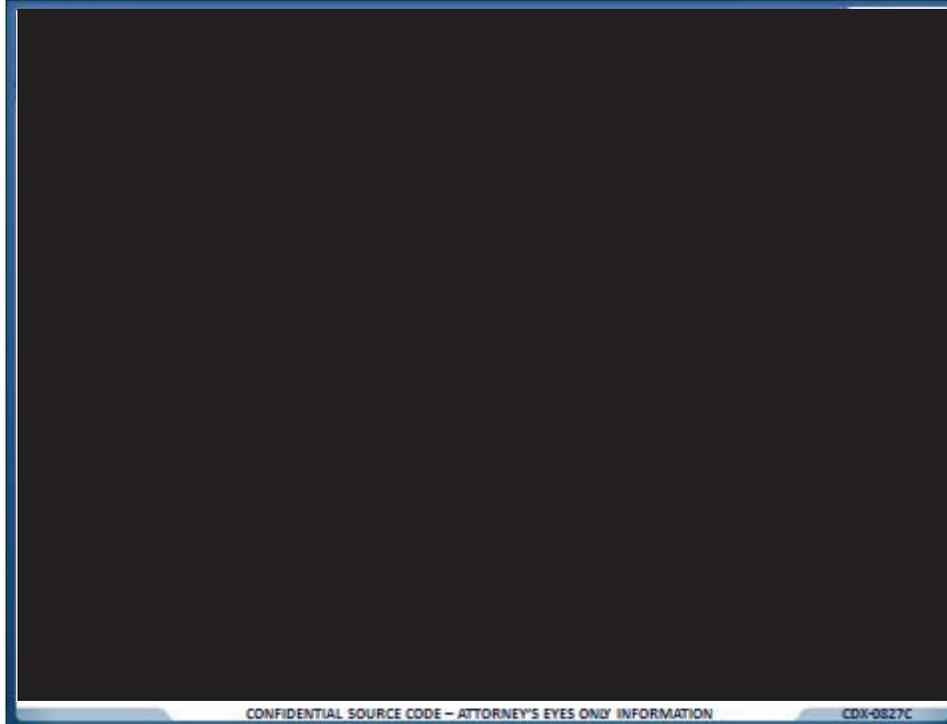
**1. The Source Code Proves that the [REDACTED] Decoders Practice Step (B) of Claim 1 and Satisfy Element (ii) of Claim 11 of the ‘663 Patent.**

The [REDACTED] source code confirms that the [REDACTED] decoders used in certain Funai accused products practice step (B) of Claim 1 and satisfy element (ii) of Claim 11 of the ‘663 Patent. As found by the ALJ, the detection of the claimed “second pattern” begins once the “first pattern” is observed with [REDACTED]. ID at 142; CX-1597C (Reinman WS) at Q&A 264, 280; CX-0559C ([REDACTED] Source Code) at [REDACTED]\_SC0000394, [REDACTED] [REDACTED]\_SC0000619, [REDACTED] [REDACTED]. This depends on the decoding type and the detection of the “first pattern” via [REDACTED] ID at 142; CX-1597C (Reinman WS) at Q&A 264, 280.

The [REDACTED] [REDACTED] in CX-0559C ([REDACTED] Source Code) at [REDACTED]\_SC0000403-04 for the [REDACTED] products, and [REDACTED] in CX-0559C ([REDACTED] Source Code) at [REDACTED]\_SC0000626-27 for the [REDACTED] products, [REDACTED] “second pattern.” ID at 143; CX-1597C (Reinman WS) at Q&A 264, 280. [REDACTED]

[REDACTED] *Id.* [REDACTED] *Id.*; CX-0559C ([REDACTED] Source Code) at [REDACTED]\_SC0000406, ln. 27579 ([REDACTED]); [REDACTED]\_SC0000629, [REDACTED]

[REDACTED] the “offset” described in step (B) of Claim 1 and element (ii) of Claim 11. For the [REDACTED] products, this is shown in CDX-0827C (Reinman 028) (which is effectively identical to the code for the [REDACTED] products):



[REDACTED]

[REDACTED] ID at 143; CX-1597C (Reinman WS) at Q&A 264, 280; CX-0559C ([REDACTED] Source Code) at [REDACTED]\_SC0000449, [REDACTED]

[REDACTED]\_SC0000666, [REDACTED]

[REDACTED]

[REDACTED] ID at 143; CX-1597C (Reinman WS) at Q&A 264, 280; *see* CX-0559C ([REDACTED] Source Code) at [REDACTED]\_SC0001761,

[REDACTED]\_SC0001730, [REDACTED]

( [REDACTED] [REDACTED]

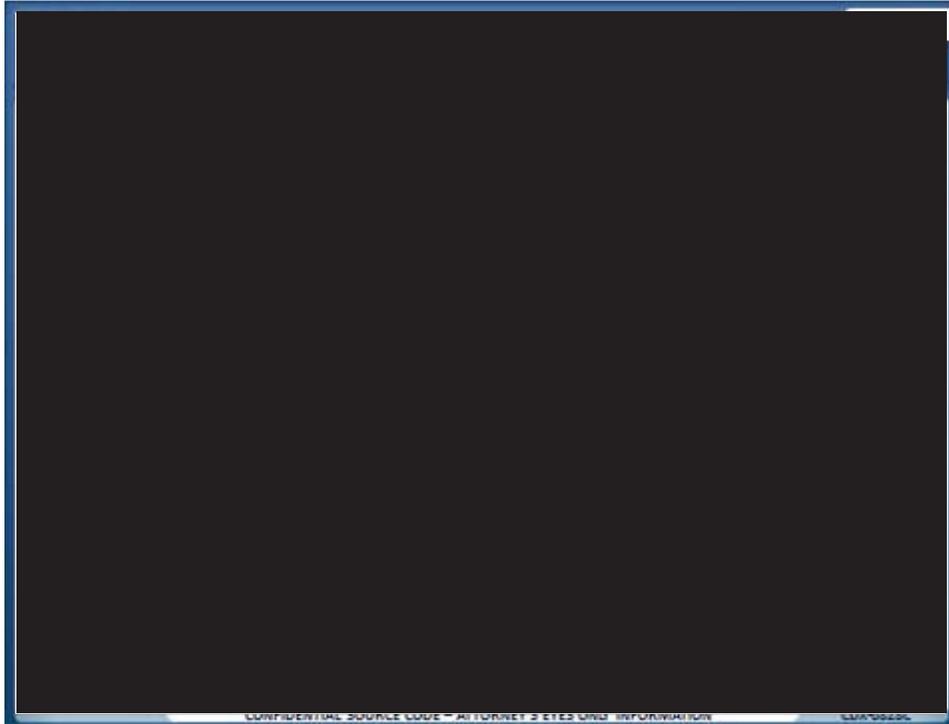
[REDACTED] CX-0559C ([REDACTED] Source Code) at

[REDACTED]\_SC0001754 [REDACTED] CX-0559C ([REDACTED]

Source Code) of [REDACTED]\_SC0001720 ([REDACTED] *See* ID at 143-44; CX-1597C

(Reinman Direct WS) at Q&A 264, 280.

This adding of the “offset” [REDACTED] to the index value [REDACTED] previously set to a “threshold” is shown for the [REDACTED] products in CDX-0828C (Reinman 029) (which is effectively identical to the code for the [REDACTED] products):



Therefore, as required under step (B) of Claim 1 and element (ii) of Claim 11, an “offset” is added to the threshold “index value” based on a second pattern in a second portion of the codeword following the first portion which has the first pattern of the codeword during operation of each of the [REDACTED] and [REDACTED] products. CX-1597C (Reinman WS) at Q&A 264, 280.

**2. The Source Code Proves that the [REDACTED] Decoders Practice Step (C) of Claim 1 and Satisfy Element (iii) of Claim 11 of the ‘663 Patent.**

The [REDACTED] source code similarly proves that the [REDACTED] decoders used in certain Funai accused products practice step (C) of Claim 1 and satisfy element (iii) of Claim 11 of the ‘663 Patent. As found by the ALJ, the “value” of this limitation will come

from either [REDACTED]

[REDACTED]

[REDACTED] CX-0559C ([REDACTED] Source Code) at

[REDACTED]\_SC0000407 for the [REDACTED] products, and [REDACTED]

CX-0559C ([REDACTED] Source Code) at [REDACTED]\_SC0000630 for the [REDACTED]

products. *See* ID at 144; CX-1597C (Reinman WS) at Q&A 265, 281. [REDACTED]

[REDACTED]

[REDACTED] at 27648-27798 of CX-0559C ([REDACTED] Source Code) at

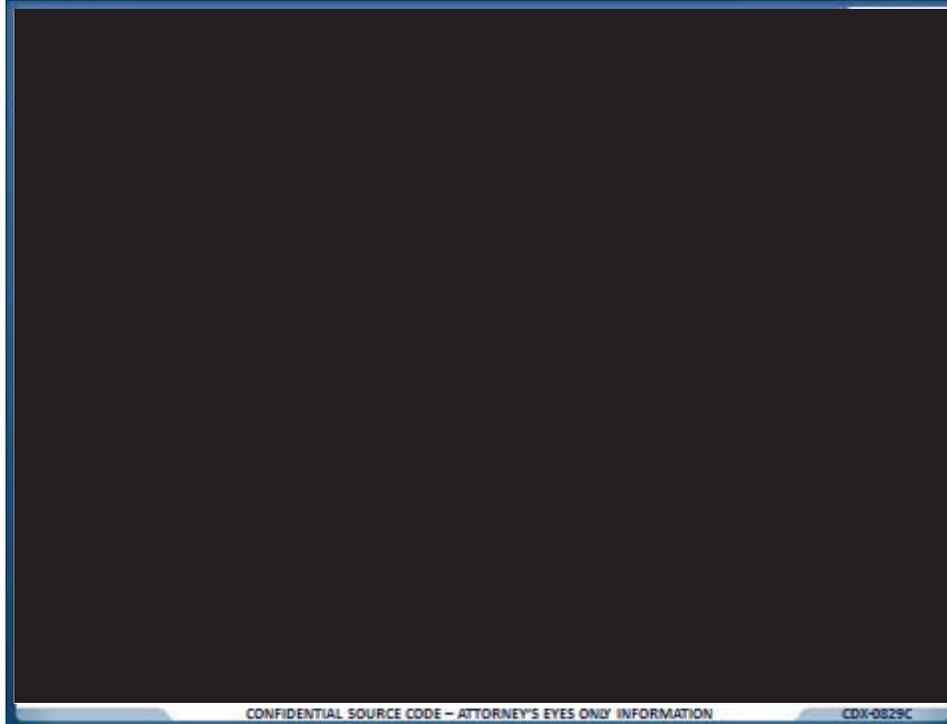
[REDACTED]\_SC0000408-411 for the [REDACTED] products, and [REDACTED]

CX-0559C ([REDACTED] Source Code) at [REDACTED]\_SC0000631-633 for the [REDACTED]

products, which [REDACTED]. *See* ID

at 144-45; CX-1597C (Reinman WS) at Q&A 265, 281.

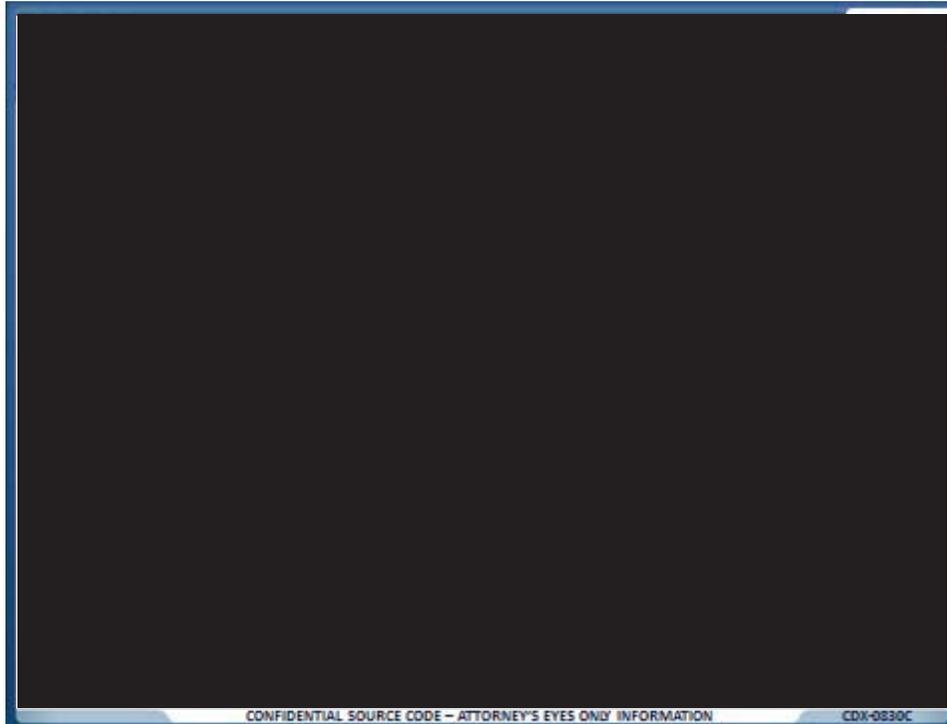
For the [REDACTED] products, this is shown in CDX-0827C (Reinman 028) (which is effectively identical to the code for the [REDACTED] products):



This “value” [REDACTED]  
[REDACTED]. See ID at 145; CX-1597C (Reinman WS) at Q&A 265, 281;  
CX-0559C ([REDACTED] Source Code) at [REDACTED]\_SC0000449, [REDACTED]  
[REDACTED]\_SC0000666, [REDACTED] [REDACTED]  
[REDACTED]  
[REDACTED] See ID at 145; CX-1597C (Reinman WS) at Q&A 265, 281; CX-0559C  
([REDACTED] Source Code) at [REDACTED]\_SC0001761, [REDACTED]  
[REDACTED]); [REDACTED]\_SC0001730, [REDACTED] [REDACTED]

The “value” [REDACTED]  
[REDACTED] CX-0559C ([REDACTED] Source Code) at  
[REDACTED]\_SC0001754 [REDACTED] CX-0559C ([REDACTED]  
Source Code) of [REDACTED]\_SC0001720 ([REDACTED] See ID at 145; CX-1597C  
(Reinman WS) at Q&A 265, 281. For the [REDACTED] products, this adding of the “value”

██████████ to the threshold index value ██████████ is shown in CDX-0830C (Reinman 031) (which is effectively identical to the code for the ██████████ products):



Hence, as required under step (C) of Claim 1 and element (iii) of Claim 11, a “value” is added to the threshold “index value” based on a third pattern in a third portion of the codeword following the second portion of the codeword, which is determined in response to the first portion having the first pattern. *See* CX-1597C (Reinman DWS) at Q&A 265, 281.

**3. The ██████████ Decoders Used in Certain Funai Accused Products Literally Practice Steps (B) and (C) of Claim 1 and Elements (ii) and (iii) of Claim 11.**

In light of the above, there is no dispute that the accused decoders calculate an “offset” “based on a second pattern in a second portion of said codeword” as required in step (B) of Claim 1 and element (ii) of Claim 11. There also is no dispute that a “value” is calculated “based on a third pattern in a third portion of said codeword” as required in step (C) of Claim 1 and element (iii) of Claim 11. And there is no dispute that the claimed “offset” and “value” both

ultimately are added to the claimed “index value” that had been set previously to a “threshold” in step (A) of Claim 1 and element (i) of Claim 11. Therefore, there should be no dispute that steps (B) and (C) of Claim 1 are practiced and elements (ii) and (iii) of Claim 11 are satisfied by the [REDACTED] decoders used in certain Funai accused products.

Nonetheless, Funai argues that because the claimed “offset” and “value” [REDACTED] [REDACTED] [REDACTED], somehow the [REDACTED] decoders do not infringe. This purported distinction, however, is premised on the erroneous assumption that step (B) (and element (ii)) and step (C) (and element (iii)) must be performed in a particular order (*e.g.*, step (B) before step (C)). Yet there is nothing in Claim 1 or Claim 11 that requires this. *See* JX-0007 (‘663 Patent) at col. 7, lns. 32-42; *Altiris, Inc. v. Symantec Corp.*, 318 F.3d 1363, 1369 (Fed. Cir. 2003) (“Unless the steps of a method actually recite an order, the steps are not ordinarily construed to require one.”) (citation omitted). Indeed, Funai’s own expert acknowledged at the Hearing that steps (B) and (C) of Claim 1 (and by analogy elements (ii) and (iii) of Claim 11) can be performed in a different order than listed in the claim. *See* Schonfeld, Tr. 1600:14-24 (testifying that “depending on the order of where you perform steps B and C, you can change one or the other”). Importantly, this also means that step (B) and step (C) can be performed [REDACTED]. Thus, the “offset” of step (B) (and element (ii)) and the “value” of step (C) (and element (iii)) can be added to the threshold “index value” of step (A)/element (i) [REDACTED].

That is exactly what happens in the accused decoders. As acknowledged by the ALJ, the accused [REDACTED] decoders [REDACTED]

█. ID at 142-46; *see also* CX-1597C (Reinman WS) at Q&A 264-65, 280-81; CIB 259-65. As a consequence, step (B) and step (C) of Claim 1 are literally practiced (and elements (ii) and (iii) of Claim 11 are satisfied) by the accused decoders. In other words, the decoders are literally “adding an offset to said index value” as required in step (B) (and element (ii)). And the decoders are literally “adding a value to said index value” as required in step (C) (and element (iii)). The accused decoders █

Therefore, the █ decoders used in certain Funai accused products literally practice step (B) and step (C) of Claim 1 and literally satisfy element (ii) and element (iii) of Claim 11 of the ‘663 Patent.

**4. If Not Practiced Literally, the Accused Decoders Practice Steps (B) and (C) of Claim 1 and Elements (ii) and (iii) of Claim 11 Under the Doctrine of Equivalents.**

Moreover, even if not practiced literally, any difference between the operation of the accused Funai products using █ decoders and each of step (B) and step (C) from Claim 1, and each of element (ii) and element (iii) of Claim 11, is insubstantial.

**(a) The Purported Distinction Between Step (B) of Claim 1 (and Element (ii) of Claim 11) and the Accused Decoders Is Insubstantial.**

The purported distinction identified between the █ decoders and step (B) of Claim 1 (and also element (ii) of Claim 11) is entirely insubstantial. Specifically, the accused decoders perform the exact same *function* as step (B) (and element (ii)) by increasing the threshold “index value” from step (A)/element (i) by the claimed “offset.” CRB at 65-66; CX-1597C (Reinman WS) at Q&A 268; *see* ID at 144. The accused decoders do this in substantially the same *way* as step (B) (and element (ii)), *i.e.*, by adding an “offset” calculated “based on a

second pattern in a second portion of said codeword.” *See id.* And the accused decoders produce the exact same *result* as step (B) (and element (ii)), *i.e.*, the magnitude of the threshold “index value” has been increased by the value of the added “offset.” *Id.* Therefore, even if not practiced literally, the decoders used in the [REDACTED] decoders at issue practice step (B) of Claim 1 and element (ii) of Claim 11 under the doctrine of equivalents. *Id.*; *Pozen Inc. v. Par Pharm., Inc.*, 696 F.3d 1151, 1167 (Fed. Cir. 2012) (“One way of proving infringement under the doctrine of equivalents is by showing on a limitation by limitation basis that the accused product performs substantially the same function in substantially the same way with substantially the same result as each claim limitation of the patented product.”) (citation omitted).

**(b) The Purported Distinction Between Step (C) of Claim 1 (and Element (iii) of Claim 11) and the Accused Decoders Is Insubstantial.**

The purported distinction identified between step (C) of Claim 1 (and element (iii) of Claim 11) and the accused decoders also is entirely insubstantial. Namely, the accused decoders perform the exact same *function* as step (C) (and element (iii)) by increasing the threshold “index value” from step (A)/element (i) by the claimed “value.” CRB at 65-66; CX-1597C (Reinman WS) at Q&A 268; *see* ID at 144. The accused decoders do this in the substantially the same *way* as step (C) (and element (iii)), *i.e.*, by adding a “value” calculated “based on a third pattern in a third portion of said codeword.” *Id.* And the accused decoders produce the exact same *result* as step (C) (and element (iii)), *i.e.*, the magnitude of the threshold “index value” has been increased by the added “value.” *Id.* Therefore, even if not practiced literally, the [REDACTED] decoders used in certain Funai accused products practice step (C) of Claim 1 and element (iii) of Claim 11 under the doctrine of equivalents. *Id.*; *Pozen Inc.*, 696 F.3d at 1167.

**C. The [REDACTED] Decoders Practice all Steps of Claim 1 and Satisfy All Elements of Claim 11.**

For the reasons discussed above, and in Complainants' prior briefs to the Commission, Complainants respectfully request that the Commission find that the [REDACTED] decoders used in certain Funai products practice all steps of Claim 1 and satisfy all elements of Claim 11 of the '663 Patent.

**VI. QUESTION 5**

*Please discuss and cite the record evidence, if any, that shows a third party user of each of the Funai products accused of infringing the '663 patent performed each and every step of asserted claims 1-9 of the '663 patent.*

The record evidence demonstrates that third-party users of each of the Funai products accused of infringing the '663 Patent perform each and every step of asserted Claims 1-9 of the '663 Patent.<sup>8</sup>

As described at the hearing and acknowledged by the ALJ, the end users of the accused Funai products directly infringe Claims 1-9 of the '663 Patent. ID at 156-58; CX-1597C (Reinman WS) at Q&A 287-88. In particular, Complainants' expert Dr. Reinman testified that the accused Funai products necessarily infringe when playing high-definition H.264-encoded Blu-ray discs or when streaming high-definition H.264-compliant videos. CX-1597C (Reinman WS) at Q&A 287-88. Dr. Richardson confirmed this, testifying that the infringing functionality "is a critical feature of the Blu-Ray disc players and the 'smart' TVs that constitute the Funai

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<sup>8</sup> Given the complete overlap of disputed issues between method Claim 1 and apparatus Claim 11 of the '663 Patent, the question of indirect infringement of Claim 1 and its dependent claims (*i.e.*, Claims 2-9) largely is moot. In other words, if the common elements of Claim 11 and Claim 1 are satisfied by each of the relevant Funai products, then Funai necessarily directly infringes Claim 11 of the '663 Patent by importing the accused devices into the United States. As such, the relevant accused products should be subject to an exclusion order based on direct infringement of Claim 11 alone, regardless of whether Funai also is found to indirectly infringe Claim 1 or any of its dependent claims.

Accused Products.” CX-1644C (Richardson RWS) at Q&A 499-500. This is exactly the type of circumstantial evidence the Federal Circuit has found sufficient to show direct infringement.

*Vita-Mix Corp. v. Basic Holding, Inc.*, 581 F.3d 1317, 1326 (Fed. Cir. 2009).

Moreover, Dr. Reinman himself provided detailed demonstration evidence at the Hearing of a representative accused product actually performing infringing operations in the United States. CX-1597C (Reinman WS) at Q&A 215-20; CX-0503C (Reinman Report Ex G). This direct evidence demonstrated that an end user playing a simple 90-second movie trailer using the accused Funai products necessarily practices the asserted method claims over *four million times*. *See id.* Therefore, any end user that uses one of the Funai accused products for the most basic of video-related tasks necessarily would perform each and every step of Claims 1-9 of the ‘663 Patent not just once, but millions upon millions of times.

## VII. QUESTION 6

*Please discuss and cite the record evidence, if any, that shows Funai actively and knowingly aided and abetted another’s direct infringement of claims 1-9 of the ‘663 patent.*

The record evidence shows that Funai has and continues to actively and knowingly aid and abet the end users’ direct infringement of Claims 1-9 of the ‘663 Patent. In particular, Funai actively aids and abets the end users of the relevant Funai products to directly infringe Claims 1-9 of the ‘663 Patent through its marketing, operational support, technical support, and warranty activities. ID at 156-58; CX-1597C (Reinman WS) at Q&A 290-95. In addition, Funai does so with full knowledge that the induced acts constitute infringement of Claims 1-9 of the ‘663 Patent. *See id.*

As shown at the Hearing, decoding UEGk index values is necessary for playing high-definition H.264-compliant video content, and the asserted claims represent the only commercially feasible possibility for performing such decoding. CX-1597C (Reinman WS) at

Q&A 221-55. As acknowledged by the ALJ, Funai “featur[es] the accused H.264 high-definition playback functionality” of the accused products through its marketing efforts, instruction materials, technical support, and warranty support. ID at 156-57; CX-1597C (Reinman WS) at Q&A 290-95.

As also acknowledged by the ALJ, the evidence presented by Complainants and its expert Dr. Reinman shows how specific intent can be inferred from Funai’s continued and deliberate promotion of functionality in the accused products that necessarily practices asserted Claims 1-9 of the ‘663 Patent – promotion that occurred prior to the filing of the complaint in this investigation and continues to this day. See ID at 156-58; CX-1597C (Reinman WS) at Q&A 290-95. Therefore, the Commission should affirm the ALJ’s determination that Funai actively and knowingly aided and abetted another’s direct infringement of Claims 1-9 of the ‘663 Patent.

### VIII. QUESTION 7

*Please discuss and cite the record evidence, if any, of Funai’s pre-suit knowledge of the ‘087 patent and/or the ‘663 patent and Funai’s pre-suit knowledge that the induced acts constitute infringement of the ‘087 patent and/or the ‘663 patent.*

The record evidence shows that Funai had knowledge of both the ‘087 and ‘663 Patents, and also had knowledge that the acts it induced through its marketing, operational support, technical support, and warranty activities constituted infringement of both the ‘087 and ‘663 Patents, no later than [REDACTED].

#### A. Funai’s Pre-Suit Knowledge of the ‘087 Patent

Funai had pre-suit knowledge of the ‘087 Patent and its infringement at least by [REDACTED]

[REDACTED] when LSI [REDACTED]

[REDACTED]

[REDACTED]. CX-1145C ([REDACTED]) at 15. Funai was provided with

pre-suit knowledge of the '087 Patent [REDACTED], when LSI presented [REDACTED]

[REDACTED]. CX-1190C ([REDACTED]) at 30.

**B. Funai's Pre-Suit Knowledge of the '663 Patent**

Funai had pre-suit knowledge of the '663 Patent and its infringement at least by [REDACTED], when LSI [REDACTED]

[REDACTED] CX-1145C ([REDACTED]) at 15. Moreover, LSI [REDACTED]

[REDACTED] *Id.* at 40-

75. Funai was provided with pre-suit knowledge of the '663 Patent [REDACTED]

[REDACTED], when LSI [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] CX-1190C ([REDACTED]) at 30, 152-177. LSI further discussed the '663 Patent with Funai [REDACTED]. *See* CX-1146C ([REDACTED]

[REDACTED]) at 2-5; CX-1147C ([REDACTED]) at

2-5; CX-0341C ([REDACTED]) at 7.

**IX. QUESTION 8**

*What record evidence supports or does not support the conclusion that the '958 patent is entitled to the July 30, 1996 priority date of U.S. Patent No. 5,862,182?*

The record evidence shows that U.S. Patent No 6,452,958 ("the '958 Patent") is entitled to the July 30, 1996 priority date of U.S. Patent No. 5,862,182 ("the '182 Patent"). The ALJ correctly determined that the amendment to the '958 Patent adding the claim of priority to '182

Patent was procedurally proper under the U.S. Patent & Trademark Office (“PTO”) rules in place at the time. ID at 207-208. Respondents have not challenged this determination in their contingent petitions for review. *See* Funai Pet. at 54-55; Realtek Pet. at 17-23. Nor do Respondents assert that the incorporation by reference was substantively improper due to the alleged addition of “new matter.” *Id.*<sup>9</sup> Accordingly, the dispute over the priority date of the ‘958 Patent is based entirely on whether the specification of the ‘182 Patent supports the asserted claims of the ‘958 Patent. *See, e.g., Martek Biosciences Corp. v. Nutrinova, Inc.*, 579 F.3d 1363, 1369 (Fed. Cir. 2009) (“In order to gain the benefit of the filing date of an earlier application under 35 U.S.C. § 120, each application in the chain leading back to the earlier application must comply with the written description requirement of 35 U.S.C. § 112.”) (internal quotations omitted).

“The test for sufficiency of support in a parent application is whether the disclosure of the application relied upon reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter.” *Id.* at 1369 (Fed. Cir. 2009) (internal quotations omitted). “In other words, *‘the earlier application need not describe the claimed subject matter in precisely the same terms as found in the claims at issue.’*” *Id.* (quoting *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1331 (Fed. Cir. 2008)) (emphasis added). “Whether the written description requirement is met is a question of fact.” *Id.*

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<sup>9</sup> Funai asserts that “[t]he ID’s conclusion that the incorporation of the ‘574 application did not add new matter is premised on the ID’s finding that the asserted claims of the ‘958 patent are limited to real code [sic] and do not include complex codes.” Funai Pet. at 55 n.18. This is incorrect. The ALJ’s finding in this regard makes no mention of codes, and simply states that “the incorporation of the prior specification did not add ‘new matter’ to the application because the claims of the ‘958 patent were supported by the application prior to amendment, therefore precluding a finding of ‘new matter.’” ID at 208. In any case, as set forth in Complainants’ Petition for Review and responses to Respondents’ Petitions for Review, the ‘958 Patent specification itself discloses so-called “complex codes.”

Thus, the specification of the '182 Patent need not *precisely* describe the claim terms of the '958 Patent, but must merely convey to one of ordinary skill in the art that Dr. van Nee had possession of those claim elements at the time of the disclosure. Complainants' expert, Dr. Katti, provided extensive testimony that the '182 Patent fully disclosed the asserted claims of the '958 Patent to one of ordinary skill in the art, and the ALJ properly credited his testimony.

Respondents have asserted that the following claim terms are not supported by the '182 Patent: (1) serial-to-parallel converter; (2)  $M > N$ ; (3) autocorrelation sidelobes; (4) QPSK; and (5) scrambler. Respondents are incorrect.

**A. Serial-to-parallel converter**

The concept of “a serial-to-parallel converter that groups the data bits” is disclosed in the '182 Patent. For example, the specification of the '182 Patent states:

Specifically, assume that OFDM transmitter 100, FIG. 1, embodying the principles of our invention receives via encoder circuit 30 a stream of data bits from a source of data bits 25. Encoder circuit 30, which may be, for example, a conventional digital signal processor, *partitions the data stream as it is received into successive groups of twelve bits each group* and stores each such group as it is formed in internal memory (not shown). Encoder circuit 30 then unloads a group of stored data bits from the internal memory, encodes the data bits in accordance with the principles of the invention and supplies the result to Inverse Fast-Fourier Transform (IFFT) processor 40. Encoder circuit 30, more particularly, first encodes the group of twelve bits that it unloads from internal memory into, for example, four 8-PSK (phase shift keying) phases as is done conventionally for 8-PSK in general.

CX-0878 ('182 Patent) at 2:40-55 (emphasis added). This passage specifically discusses *grouping data bits*, and a person of ordinary skill in the art would have understood this to disclose using a serial-to-parallel converter *to group data bits*. CX-1641C (Katti RWS) at 23. The function of the “serial-to-parallel converter” in the '958 Patent is specifically to group data bits. Thus, the '182 Patent's description of a component that groups data bits conveys to a

person of ordinary skill in the art that Dr. van Nee was in possession of the serial-to-parallel converter of the '958 Patent at the time of the disclosure of the '182 Patent.<sup>10</sup>

**B. M>N**

The '182 Patent discloses an extended code set in which the number of codes is greater than the length of each code ( $M>N$ ). The '958 Patent claims *non-orthogonal* code sets in which the number of codes in the code set is larger than the length of each code in chips. The '958 Patent distinguishes such code sets from code sets in “conventional M-ary keying systems,” in which “the number of possible codes  $M$  is not more than the code length  $N$  in chips.” JX-0003 ('958 Patent) at 4:59-65.

An “orthogonal” code set in which the number of codes equals the code length can be expressed as a square matrix in which the number of rows is equal to the number of columns. CX-1641C (Katti RWS) at 24. Each row represents a code and each column entry represents a chip. *Id.* Thus, in a square matrix,  $M=N$ . An extended code set in which  $M>N$  can thus be expressed as a nonsquare matrix. *Id.* Matrix A in column 4 of the '182 Patent explicitly discloses a set of codes in which the number of codewords is greater than the code length, as shown below. CX-0878 ('182 Patent) at 4:49-58.

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<sup>10</sup> The '182 Patent further discloses that after the encoder circuit encodes the groups of bits into phases, “it then supplies those values for those phases to IFFT processor 40, which may be, for example, a conventional digital signal processor (DSP).” CX-0878 ('182 Patent) at 3:35-38. A person of ordinary skill in the art would have understood “DSP” to include a serial-to-parallel converter. CX-1641C (Katti RWS) at 19.

$$A = \begin{bmatrix} 1 & 1 & 1 & 1 \\ 1 & 0 & 1 & 1 \\ 1 & 1 & 0 & 1 \\ 1 & 0 & 0 & 1 \\ 1 & 1 & 1 & 0 \\ 1 & 0 & 1 & 0 \\ 1 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \end{bmatrix}$$

In fact, Dr. Katti testified that there are multiple ways in which one of ordinary skill in the art would interpret Matrix A in the ‘958 Patent to disclose a code set in which the number of codes is greater than the number of code chips. Matrix A reflects “eight phases”  $\Theta_i$ , and these eight phases are used to modulate carrier waves. CX-0878 (‘182 Patent) at col. 2, lns. 23-39, col. 4, lns. 34-59. The eight phases are based on “M input phases, e.g., four phases, directly related to input data.” *Id.* at col. 1, lns. 34-35. The input data is in the form of “groups of twelve bits.” *Id.* at col. 2, lns. 43-46; Katti, Tr. 1866:2-5. Each “bit” can take on one of two values (0 or 1). Because there are twelve data bits of two possible values each, there are  $2^{12} = 4096$  possible codes. Katti, Tr. 1866:2-5. Thus,  $M=4096$ .

The four phases are multiplied by Matrix A to produce a “complementary code” represented by “output phases  $\Theta_1$  through  $\Theta_8$ .” CX-0878 (‘182 Patent) at col. 2, lns. 23-24. These eight “output phases” are the chips that make up each “complementary code.” Thus,  $N=8$ .

In sum, the code set  $M=4096$  and the code length  $N=8$ . Hence, a code set in which  $M>N$  is disclosed in the ‘182 Patent.

**C. Autocorrelation Sidelobes Suitable for Multipath Environments**

The ‘182 Patent discloses “autocorrelation sidelobes suitable for multipath environments.” Dr. Katti testified that a person of ordinary skill in the art could determine the autocorrelation sidelobes of a particular code set, and that low autocorrelation sidelobes imply a connection to complementary codes. As Dr. Katti testified:

[B]y just looking at the code set I could check what the autocorrelation sidelobes were for that code set. And if they were small, that implies a connection to complementary codes, which have that strong property that the autocorrelation sidelobes are actually zero.

Katti, Tr. 1839:1-7. Thus, the ‘182 Patent supports the claim element “autocorrelation sidelobes suitable for multipath environments” if it discloses a code set that a person of ordinary skill in the art would recognize as having those properties.

The ‘182 Patent discloses the use of the following equation to generate a complementary code:

$$c = \{ e^{j(\phi_1 + \phi_2 + \phi_3 + \phi_4)}, e^{j(\phi_1 + \phi_3 + \phi_4)}, e^{j(\phi_1 + \phi_2 + \phi_4)}, -e^{j(\phi_1 + \phi_4)}, e^{j(\phi_1 + \phi_2 + \phi_3)}, e^{j(\phi_1 + \phi_3)}, -e^{j(\phi_1 + \phi_2)}, e^{j\phi_1} \} \quad (1)$$

CX-0878 (‘182 Patent) at 2:21-22. This is identical to Equation 18-1 from the 802.11b standard, which is used to generate codes in CCK modulation. CX-0116C (802.11 Standard, Jun. 2007) at §18.4.6.5. The ‘182 Patent also specifically discloses the series {111-111-11} as a possible kernel for generating codes of length 8. CX-0878 (‘182 Patent) at 1:62-64. This is identical to the “cover sequence” in the 802.11b Standard. CX-0116C (802.11 Standard, Jun. 2007) at

§18.4.6.5.1.<sup>11</sup> Accordingly, the ‘182 Patent describes generating the code set in the 802.11b Standard.

Dr. Negus testified that the use of the “cover sequence” for the code set derived by Equation 18-1 in CCK modulation provides low autocorrelation sidelobes. CX-1596C (Negus DWS) at 70. The ALJ accepted this testimony, ruling that “[t]he evidence shows that applying the cover sequence in fact results in low autocorrelation sidelobes.” ID at 195. Thus, the ‘182 Patent specifically describes generating a code set that a person of ordinary skill in the art would recognize as intrinsically having low autocorrelation sidelobes suitable for multipath environments. CX-1641C (Katti RWS) at 24-25.

A person of ordinary skill in the art likewise would have understood the ‘182 Patent to disclose a modulation system suitable for multipath environments. As Dr. Katti testified, the problems of operating wireless local area networks indoors (*i.e.*, in multipath environments) were well understood at the time of the filing of the ‘182 Application, and thus a person of ordinary skill in the art would have understood the low autocorrelation sidelobes to be suitable for multipath environments. CX-1641C (Katti RWS) at 25.

Finally, the ‘182 patent teaches how to design complementary codes with low autocorrelation sidelobes for OFDM. *Id.* A person of ordinary skill in the art would have known that OFDM is an especially attractive modulation system for tackling multipath. *Id.* In fact, subsequent 802.11 Standards such as 802.11g and 802.11n adopted OFDM precisely for its ability to handle multipath in indoor environments. *Id.* Dr. Katti testified that a person of ordinary skill in the art would know that OFDM is suitable for multipath, and therefore would

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<sup>11</sup> The 802.11b Standard states, “[t]he fourth and seventh chips are rotated 180° by a cover sequence to optimize the sequence correlation properties and minimize dc offsets in the

have been able to apply the teachings of the ‘182 Patent (specifically its code design) to the problem of communication in multipath environments. *Id.*

Thus, from several perspectives, a person of ordinary skill in the art would have understood the ‘182 Patent to disclose autocorrelation sidelobes suitable for multipath environments.

#### **D. QPSK**

QPSK stands for “Quadrature Phase Shift Keying” and is a type of Phase Shift Keying (“PSK”). “BPSK,” “QPSK,” and “8-PSK” are each subtypes of PSK defined by the number of phases used. BPSK uses two phases (where the “B” is for “binary”). QPSK uses four phases (where “Q” is for “quadrature”). And 8-PSK uses eight phases. The ‘182 Patent explicitly discusses PSK using various phases. Specifically, the ‘182 Patent states:

It is also possible to do fallback rates (decreased data rates with larger coverage) by increasing the code length (using length 16 or 32 codes instead of a length 8 code) or by decreasing the number of phases (*e.g., using BPSK instead of 8-PSK*).

CX-0878 (‘182 Patent) at 7:39-43 (emphasis added). Thus, the teaching in the ‘182 Patent of “decreasing the number of phases” by using a type of PSK with fewer phases than 8-PSK would include using either BPSK or QPSK, both of which have fewer phases than 8-PSK.

Importantly, the manner in which the ‘182 Patent discusses PSK recognizes that PSK techniques would be readily understood and accessible to one of ordinary skill in the art. Thus, a person of ordinary skill in the art would understand the general discussion of PSK to include various PSK techniques, including QPSK. CX-1641C (Katti RWS) at 25-26.

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codes.” CX-0116C (802.11 Standard, Jun. 2007) at §18.4.6.5.1. The negative values in the fourth and seventh positions in the series {111-111-11} correspond to 180° rotations.

**E. Scrambler**

The disclosure of the ‘182 Patent “reasonably conveys to the artisan that the inventor had possession” of a scrambler. *Martek*, 579 F.3d at 1369. In arguing otherwise, Respondents must deny the testimony of their own expert, Dr. Heegard, who testified that a scrambler is “pretty much inherit [sic, inherent] in any kind of digital communication systems” and thus would not have to be explicitly disclosed. CX-1641C (Katti RWS) at 26. The ‘182 Patent states that “[t]he invention relates to the modulation of data for transmission *in a digital communications system.*” CX-0878 (‘182 Patent) at 1:6-7 (emphasis added). Thus, under the testimony of Respondents’ own expert, the fact that the ‘182 Patent discusses a “digital communication system” means that the ‘182 Patent *inherently* discloses a scrambler, and a person of ordinary skill in the art would have understood the digital communication system described in the ‘182 Patent to include a scrambler, a conclusion shared by Respondents’ expert and Complainants’ expert, Dr. Katti. CX-1641C (Katti RWS) at 26.

**X. QUESTION 9**

*Please discuss and cite the record evidence, if any, that shows the asserted claims of the ‘958 patent are invalid as being anticipated or rendered obvious by Prasad. Assuming the priority date of the ‘958 patent is April 22, 1998, please discuss and cite the record evidence, if any, that shows the combination of the Harris Proposal in view of the van Nee article, and the combination of the Proakis textbook in view of the Weathers patent render the asserted claims of the ‘958 patent obvious.*

**A. Prasad Does Not Anticipate or Render Obvious any Claim of the ‘958 Patent.**

Prasad does not anticipate any claim of the ‘958 Patent because Prasad does not disclose a code set in which the number of codes is greater than the code length ( $M > N$ ).

Prasad is directed to a system for transmission over a multi-carrier system in which the available bandwidth is divided into several carriers and encodes data across all carriers

simultaneously. CX-1641C (Katti RWS) at 30, Q&A 169-170. This is fundamentally different from the single-carrier system of the '958 Patent. *Id.* In a multi-carrier system, one has to design encoding algorithms to map incoming data bits into codewords that are simultaneously modulated over multiple carriers. *Id.* at 30-31. The chips in a codeword are therefore spread over multiple carriers and frequencies. *Id.* Prasad maps a group of data bits to a single complementary sequence of chips (a code) that is then modulated in parallel onto all the sub-carriers. *Id.* at 31, Q&A 173. The problem that Prasad addresses is how to map the group of data bits to the complementary sequence that is then modulated onto the sub-carriers and sent over the air. *Id.*

Because Prasad is a multicarrier system, a *single* code is transmitted over *multiple* carriers. In a single carrier system such as the '958 Patent, the code is modulated over a *single* carrier frequency. *Id.* Hence, Prasad applies to a different type of communication system compared to the '958 Patent. *Id.* Respondents' interpretation of Prasad as disclosing  $M > N$  reflects a fundamental misunderstanding of "multicarrier" systems as opposed to "single-carrier" systems. Prasad transmits the same code over multiple carriers. See CX-1641C (Katti RWS) at 30-31, Q&A 172-173. Analogizing the single-carrier system of the '958 Patent, each code should only be counted once. A single code transmitted on multiple carriers does not constitute multiple codes.

With this distinction in mind, it is clear that Prasad fails to teach deriving a code set in which the number of codes is greater than the code length. An example of the code set in Prasad is shown in CDX-0301 (Katti 002):

## Prasad Code Set

CDX-0301

**this yields**

$$\Delta' = \begin{bmatrix} +1+1 -1+1 & -1 -1-1+1 & +1+1-1+1 & -1 -1 -1+1 \\ +1 -1 -1 -1 & -1 +1-1 -1 & +1 -1-1 -1 & -1+1 -1 -1 \\ -1 -1 -1 +1 & +1+1 -1+1 & +1+1+1-1 & -1 -1+1 -1 \\ -1 +1 -1 -1 & +1 -1 -1 -1 & +1 -1+1+1 & +1+1+1+1 \end{bmatrix}$$

....(12)

RX-0590 (Prasad – Data Transmission) at 2  
CDX-0301

In this example there are 4 codewords (M=4), which are complementary to each other, and each codeword has 16 chips (N=16). *Id.* at 32, Q&A 176. *Dr. Heegard admitted that this code set has the relationship M<N during the hearing.* Heegard, Tr. 1125:1-20. And because this is the only code set clearly described in Prasad, Dr. Heegard’s testimony confirms that Prasad does not disclose a code set in which M>N.

To put it into the terminology of the ‘958 Patent, the number of chips in each codeword is M×N, and there are at most 2M such codewords. The minimum value for N is 2, and in almost all the examples in the article N takes values from 4 to 32 bits. Thus, the number of chips (N) in a codeword is typically 4M or 8M, and M<N. CX-1641C (Katti RWS) at 32, Q&A 176.<sup>12</sup>

Hence, in contrast to the asserted claims of the ‘958 Patent which require that M>N, in Prasad M<N or, at most, M=N. CX-1641C (Katti RWS) at 33, Q&A 181. As discussed above,

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<sup>12</sup> The code set in Prasad cannot be “doubled” by inverting each code, as the use of such inversions to “double” a code set was disclaimed during the prosecution of the ‘574 Application. *Id.*; JX-0004 (‘958 File History) at 44, May 10, 2000 Office Action, at 4-8.).

in the *only* code set clearly disclosed in Prasad,  $M=4$ ,  $N=16$ , and  $M<N$ . Respondents have not pointed to a single code set in Prasad in which  $M>N$ . This lack of evidence precludes a finding that there is the *clear and convincing* showing necessary to demonstrate that Prasad anticipates any claim of the '958 Patent.

Nor does Prasad render obvious any asserted claim of the '867 Patent. The code set in which  $M>N$  is a critical element of the '958 Patent, and the fact that Prasad not only fails to disclose this but *teaches away* from it by only disclosing code sets in which  $M<N$  or  $M=N$  precludes a finding of obviousness.

Further, Prasad does not render obvious the ABAB' claim limitation. While such sequences existed in the art, Respondents have pointed to nothing in the prior art in which such a sequence is used *in modulation*. In fact, Dr. Heegard described the ABAB' limitation in the '958 Patent as "silly" and "a travesty," and said that there would be no reason to use the ABAB' sequence. Heegard, Tr. 1144:18-1145:18. In light of Dr. Heegard's assertion that there would be no reason to use the ABAB' sequence, Respondents cannot argue that the use of such a sequence was obvious from the prior art. Funai's own expert testified that a person of ordinary skill in the art would have no reason to look for it.

#### **B. The Harris Proposal in View of the van Nee Article**

Assuming for the sake of argument that the Harris Proposal is prior art, the Harris Proposal in combination with the van Nee Article does not render obvious any claim of the '958 Patent.

As an initial matter, the PTO considered another version of the Harris Proposal during examination of the '958 Patent. CX-1641C (Katti RWS) at 34. "[A]lthough the standard of proof does not depart from that of clear and convincing evidence, a party challenging validity shoulders an enhanced burden if the invalidity argument relies on the same prior art considered

during examination by the [PTO].” *Tokai Corp. v. Easton Enters.*, 632 F.3d 1358, 1367 (Fed. Cir. 2011). Thus, Respondents have an “enhanced” burden in their attempt to prove invalidity of any kind based on the Harris Proposal.

**1. The Harris Proposal Is a Conventional Orthogonal System in Which  $M=N$ .**

The disclosure and history of the Harris Proposal confirm that the Harris Proposal offered a fundamentally different solution from the solution of ‘958 Patent, and it was Dr. van Nee’s *improvement upon* the Harris Proposal that actually solved the problem of high data rate modulation being addressed by the IEEE. The Harris Proposal is directed to a technique called M-ary Bi-Orthogonal Keying (MBOK) to achieve high data rates for wireless LAN communications. *Id.* at 35, Q&A 195. The very title of the Harris Proposal confirms that the code set is *orthogonal*, meaning that  $M=N$ . It was precisely such a “conventional” orthogonal M-ary keying system that the ‘958 Patent departed from in claiming an *extended* code set. Dr. van Nee’s departure from this convention was a key innovation. The Harris Proposal, in contrast, was squarely within the convention.

In the Harris Proposal, high data rates are achieved by selecting in each of an I and a Q channel in the transmitter one of eight Walsh functions (or “codes”) each of 8 chips in length. *Id.* at 32; RX-1351 (Harris Proposal) at 2. The Harris Proposal describes a code set mapped to the I-channel and in which  $M=8$  and  $N=8$ . CX-1641C (Katti RWS) at 36, Q&A 200; RX-1351 (Harris Proposal) at 8. The Harris Proposal then uses a code set for the Q channel obtained by *inverting* the code set used for the I channel. CX-1641C (Katti RWS) at 36, Q&A 200; RX-1351 (Harris Proposal) at 2. Respondents assert that this inversion results in a code set of 16 codes of 8 chips in length. CX-1641C (Katti RWS) at 36, Q&A 200. But this doubling-by-inversion technique was expressly disclaimed during prosecution of the ‘958 Patent, as described above

and as recognized by the ALJ. *Id.* Regardless of this inversion, the system of the Harris Proposal still by its terms employs an *orthogonal*, non-extended code set. Thus, in the Harris proposal, M is equal to 8 and not 16. *Id.* Since N, the number of chips, is also 8, in the Harris proposal, M=N. *Id.*

Respondents have also argued an alternate interpretation of the Harris Proposal in which there are 256 possible codes. This interpretation is also incorrect. As discussed above, the Harris Proposal describes an orthogonal code set mapped to the I-channel (inverted on the Q-channel) and in which M=8 and N=8. *Id.*; RX-1351 (Harris Proposal) at 2, 8; CX-1641C (Katti RWS) at 36, Q&A 200. These code sets are used to map 4 bits on to the I-channel, and 4 bits on to the Q channel. CX-1641C (Katti RWS) at 36, Q&A 200. Respondents may assert that this implies 8 bits are being mapped to a codeword at a time, and hence  $M=2^8=256$ . However, the correct interpretation is that M=8 and N=8, and techniques such as code-inversion and mapping an extra bit by inverting the phase of the codeword on I and Q channels are used to send 8 bits. *Id.* This does not imply that M=256. *Id.* Instead, M=8=N as discussed above.

## **2. The Harris Proposal Failed to Solve Multipath Problems.**

The Harris Proposal also fails to solve multipath problems. The Harris Proposal itself states: “Additional research is underway on variations to the chosen sequences for better multipath performance.” RX-1351 (Harris Proposal) at 15. Thus, the Harris Proposal did not solve the problem of multipath as the ‘958 Patent did. CX-1641C (Katti RWS) at 36-37. Mr. Carl Andren of Harris Corporation, who authored the Harris Proposal, confirmed this by testifying that the proposal had a problem with multipath and that several companies had analyzed the proposal and concluded that it was “not good enough in multipath.” Andren, Tr. 918:18-25.

### 3. The Harris Proposal Did Not Use Complementary Codes.

Finally, and critically, the Harris Proposal does not disclose a code set derived from complementary codes. Respondents' expert, Dr. Heegard, stated:

A set of complementary series is defined as a pair of equally long, finite sequences of two kinds of elements which have the property that the number of pairs of like elements with any given separation in one series is equal to the number of pairs of unlike elements with the same separation in the other series.

RX-0006C (Heegard DWS) at 43, Q&A 150. Dr. Katti testified that the modified Walsh codes disclosed in the Harris Proposal do not meet this definition. CX-1641C (Katti RWS) at 37, Q&A 204.

Furthermore, [REDACTED], a Harris employee who was heavily involved in the Harris Proposal, testified that [REDACTED]  
[REDACTED]  
[REDACTED]. JX-0056C ([REDACTED] Dep.) at 72. Harris [REDACTED]. CX-1641C (Katti RWS) at 37-38, Q&A 205.

Furthermore, it was Dr. van Nee himself who proposed using complementary codes in the joint proposal between Lucent and Harris that the IEEE accepted as the basis for the 802.11b Standard after *rejecting* the Harris Proposal. JX-0056C ([REDACTED] Dep.) at 78-79, 120, 156. This was confirmed by [REDACTED] (*id.*) and Mr. Andren, the author of the Harris Proposal. Andren, Tr. 917:18-24. Based on Dr. van Nee's proposal, Harris and Lucent jointly proposed a modulation approach called "complementary code keying" to the IEEE in July 1998, and this proposal became the 802.11b Standard. *Id.*

**4. The IEEE Accepted Dr. van Nee's CCK Proposal Because It Solved the Problems Left Unaddressed by the Harris Proposal.**

The history surrounding the Harris Proposal thus confirms that it was Dr. van Nee who developed the idea of using complementary codes. CX-1641C (Katti RWS) at 39, Q&A 213. Further, it was this use of complementary codes that made the modulation system suitable for multipath environments, something that Mr. Andren admitted the Harris Proposal failed to accomplish. *Id.*; Andren, Tr. 917:18-24, 919:1-11. Thus, not only are there several claim limitations missing from the Harris Proposal, but the Harris Proposal was later modified to include these limitations (*after* the '958 Patent was filed) *by Dr. van Nee himself. Id.* The IEEE considered the Harris Proposal but decided to adopt the code developed by Dr. van Nee instead. Thus, the complementary code approach in the '958 Patent, which was accepted by the IEEE, is quite different from the Harris Proposal, which was rejected.

Respondents' position regarding the Harris Proposal is that the very proposal that the IEEE rejected in favor of Dr. van Nee's CCK technique renders the '958 Patent obvious. The undisputed factual record contradicts this claim. The testimony of Mr. Andren and others involved in the development of the 802.11b Standard confirms the following facts:

- The Harris Proposal was unsuitable for multipath. Andren, Tr. 918:18-25.
- [REDACTED] Dr. van Nee proposed the idea. JX-0056C ([REDACTED] Dep.) at 72.
- The Harris Proposal was rejected by the IEEE. JX-0056C ([REDACTED] Dep.) at 78-79, 120, 156.
- The Harris Proposal was modified by Dr. van Nee to add complementary codes (CCK). Andren, Tr. 917:18-24, 919:1-11.
- Dr. van Nee's CCK technique was accepted by the IEEE. *Id.*

If Dr. van Nee's CCK solution had been obvious based on the Harris Proposal, Harris would have developed a complementary code-based system that was suitable for multipath and

the “compromise” proposal would not have been necessary. The ‘958 Patent reflects an improvement over the Harris Proposal that was recognized by the IEEE – an organization consisting of persons of ordinary skill in the art – as a novel technique that solved problems the Harris Proposal failed to address.

**5. The Failures of the Harris Proposal Cannot Be Cured by Dr. van Nee’s Own Work.**

The combination of the van Nee 1996 reference with the Harris Proposal does not render any claim obvious. Respondents’ attempts to “fill in the gaps” in the Harris Proposal with Dr. van Nee’s own work is a classic “hindsight” approach. Indeed, Federal Circuit precedent is clear that “obviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor.” *Novo Nordisk A/S v. Caraco Pharm. Labs.*, 719 F.3d 1346, 1361 (Fed. Cir. 2013) (internal quotations omitted, emphasis added). The ‘958 Patent represents a modification by Dr. van Nee to the Harris Proposal that significantly improved the proposal and solved the problem that the proposal failed to address. Here, Respondents have substituted an article written by Dr. van Nee for Dr. van Nee himself and asserted that the combination of the article and the proposal render obvious the ultimate invention. This is pure hindsight and cannot demonstrate obviousness. *See, e.g., Otsuka Pharm. Co. v. Sandoz, Inc.*, 678 F.3d 1280, 1296 (Fed. Cir. 2012) (“The inventor’s own path itself never leads to a conclusion of obviousness; that is hindsight.”)

The unambiguous evidence clearly demonstrates that the only person to whom the idea of combining the Harris Proposal with the concepts in the van Nee article was clear was Dr. van Nee, the author of the paper and *the inventor of the ‘958 patent*. The fact that only Dr. van Nee came up with the ‘958 Patent and that the only reference that Funai points to in combination with

the Harris Proposal is Dr. van Nee's own work confirms that Dr. van Nee developed a non-obvious invention that no one else had developed.

Accordingly, the record evidence does not demonstrate by clear and convincing evidence that the Harris Proposal in view of the van Nee Article renders any claim of the '958 Patent invalid for obviousness.

### **C. Proakis in View of Weathers**

The record evidence does not show by clear and convincing evidence that Proakis in view of Weathers renders any asserted claim of the '958 Patent invalid for obviousness. Neither Proakis nor Weathers discloses the claim element "wherein the code set is derived from a complementary code that provides autocorrelation sidelobes suitable for multipath environments." Further, Weathers is directed toward a "pulse compression radar system" and is therefore non-analogous art.

#### **1. Proakis**

Proakis is a digital communications textbook published in 1995. CX-1641C (Katti RWS) at 42, Q&A 230. Respondents have cited three technical areas from Proakis: (1) binary linear block codes; (2) spread spectrum communication systems; and (3) phase shift keying (including QPSK) to design a modulation and demodulation system. Such "binary linear block codes" have a long and rich literature and code constructions exist where  $M > N$ . *Id.* However, none of them have the autocorrelation properties necessary for good performance in multipath. *Id.* Proakis makes no mention of this, and there is no disclosure in Proakis concerning construction of codes with such autocorrelation properties. *Id.* Proakis teaches the general architecture of a spread spectrum communication system, but does not describe how to design a code for such systems. *Id.* A person of ordinary skill in the art would not be able to design a code with the properties claimed in the '958 Patent based on Proakis. *Id.* In particular, a person of ordinary skill in the

art would not be able to design a code set “wherein the code set is derived from a complementary code that provides autocorrelation sidelobes suitable for multipath environments” as required by all asserted claims of the ‘958 Patent.

## 2. Weathers

Weathers teaches “a pulse compression radar system” and has no relationship whatsoever to digital modulation of radio signals. RX-0099 (Weathers ‘288) at 10:46. A person of ordinary skill in the art seeking solutions for signal modulation would not consider a reference such as Weathers at all, and thus no reference combined with Weathers could render any asserted claim of the ‘958 Patent obvious. CX-1641C (Katti RWS) at 43, Q&A 240.

Weathers fails to disclose a code set in which the number of codes is greater than the code length. Weathers discloses matrices of  $K$  rows by  $N$  columns, which Weathers describes as “group-complementary codes.” *Id.* at 43, Q&A 241; RX-0099 (Weathers ‘288) at 3:13-17. Weathers makes clear that each of the matrices is a “composite compressed pulse” that represents a single “group-complementary code” of length  $K \times N$  chips. CX-1641C (Katti RWS) at 43, Q&A 242; RX-0099C (Weathers ‘288) at 3:11-27. Thus, each matrix is a single code, rather than a set of  $K$  separate codes with  $N$  chips per code. CX-1641C (Katti RWS) at 43, Q&A 242. It is irrelevant that  $K > N$  in certain matrices because for each matrix,  $M$  equals 1, and  $N$  equals  $K \times N$ .

Further, while Weathers does reference complementary codes and autocorrelation properties, Weather does not address indoor multipath issues because it is directed to radar technology. CX-1641C (Katti RWS) at 44, Q&A 243. Accordingly, Weathers fails to address the specific multipath problems addressed by the ‘958 Patent, namely, multipath issues that arise in indoor WLANs. In sum, Weathers, like Proakis, fails to disclose a code set “wherein the code

set is derived from a complementary code that provides autocorrelation sidelobes suitable for multipath environments” in the context of the ‘958 Patent.

### **3. Proakis in View of Weathers**

In light of the deficiencies outlined above with respect to both Proakis and Weathers, the two references together cannot render any claim invalid for obviousness. As an initial matter, Weathers is non-analogous and thus there would have been absolutely no reason to combine the references in the eyes of a person of ordinary skill in the art. Further, because neither reference discloses autocorrelation sidelobes suitable for multipath environments, even combining the two references would not lead to the invention of the ‘958 Patent. It was the multipath issue that set Dr. van Nee’s invention apart from the failed attempts of others in the field. Dr. van Nee solved the problem by applying a unique and novel technique involving complementary codes in which the code set is larger than the code length. This approach is not present in the combination of Proakis and Weathers, even assuming that a person of ordinary skill in the art would combine them.

Further, the ABAB’ limitation would not be obvious from these references or *any* prior art reference as discussed above. Dr. Heegard denigrated this claim feature and stated that there would be no reason to look for it. Thus, under the analysis of Respondents’ own expert, a person of ordinary skill in the art would not have arrived at the ABAB’ limitation.

Finally, any showing of obviousness is overcome by secondary considerations of nonobviousness as set forth in Complainants’ prior submissions.

## **XI. QUESTION 10**

*What record evidence supports or does not support the conclusion that U.S. Patent Application No. 08/155,661 was abandoned in December 2001 because the applicant failed to file a reply to the Office Action mailed on June 7, 2001 within the six-month statutory deadline (35 U.S.C. § 133)? Please discuss and cite the*

*record evidence, if any, showing proof of the USPTO's grant of an extension in December 2001.*

The record evidence does not support the conclusion that U.S. Patent Application No. 08/155,661 (“the ‘661 Application”) was abandoned in December 2001. While it is true that the ‘661 Application was ultimately deemed abandoned, the abandonment did not occur until March 7, 2002 at the earliest. March 7, 2002 is the filing date of U.S. Patent No. 6,707,867 (“the ‘867 Patent”). The Applicant did file a reply to the June 7, 2001 Office Action within the six-month statutory deadline. Specifically, the Applicant filed a notice of appeal, as explained further below.

**A. Under PTO Rules, Extensions of Time Are Self-Executing.**

Under PTO rules, the PTO does not “grant” extensions of time. Extensions of time are automatically effected by the Applicant’s request. The rules governing the PTO make this clear:

If an applicant is required to reply within a nonstatutory or shortened statutory time period, *applicant may extend the time period for reply* up to the earlier of the expiration of any maximum period set by statute or five months after the time period set for reply, if a petition for an extension of time and the fee set in § 1.17(a) are filed . . . .

37 C.F.R. § 1.136(a)(1) (emphasis added). Thus, time is extended *by the Applicant*, not by the PTO, and there would be no separate document in the file history showing that the PTO granted a request for an extension. The request itself grants the extension. As set forth below, the ‘661 Application was kept pending by multiple requests from the Applicant for extensions of time.

**B. The Record and the File Histories of the ‘661 and ‘295 Applications Include Substantial Evidence that the Extension of Time Was Submitted and Effective and a Response to the June 2001 Office Action Was Timely Filed.**

The record evidence makes clear that the Applicant effectively extended the time to respond to the June 2001 Office Action, and that the Applicant in fact responded to the June

2001 Office Action within the six-month statutory deadline by filing a notice of appeal in December 2001.

The file wrapper contains an office action dated June 7, 2001. RX-1165 (‘661 File History) at 213. The deadline to respond to this office action was September 7, 2001, three months after the date of the office action. *Id.* at 214. However, under 37 C.F.R. § 1.136, the time period to respond could be extended by the Applicant to up to six months. Importantly, when an Applicant files an extension of time, the time to respond is automatically extended *to the date on which the extension of time is filed.* 37 C.F.R. § 1.136(a)(2) (“The date on which the petition and the fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee.”). Thus, if the Applicant filed a petition for extension of time *and* a response on or before December 7, 2001, the Applicant duly responded to the June 2001 Office Action and saved the application from abandonment.

The record shows that the Applicant filed both a petition for extension of time and a notice of appeal on December 7, 2001. Respondents have been aware of documents outside the official file history (but nonetheless in the record) confirming that the extension of time and notice of appeal were timely filed and received by the PTO. On December 17, 2012, Respondents MediaTek and Ralink, who were later dismissed from the Investigation, filed a brief to the ALJ attaching the following documents from the ‘661 Application that had been produced by Complainants:

- A Certificate of Mailing dated December 7, 2001
- A Fee Transmittal dated December 7, 2001
- A Petition for Extension of Time Dated December 7, 2001
- A Notice of Appeal dated December 7, 2001



December 7, 2001,” and the official PTO stamp reflects that the postcard itself was returned on January 8, 2002. This postcard, along with the other documents submitted by MediaTek and Ralink, confirms beyond any doubt that a valid extension of time and notice of appeal were filed with the PTO on December 7, 2001, thereby (1) extending the deadline to respond to the June 7, 2001 Office Action and (2) responding to the June 7, 2001 Office Action within the six-month statutory deadline.

Further, the file wrapper contains a “File History Content Report” showing that a document titled “Extension of Time” is missing from the file history. RX-1165 (‘661 File History) at 224. A second “File History Content Report” shows that a “Notice of Appeal” is also missing. *Id.* at 225. Taken together, these two documents indicate that a request for an extension of time to respond to the June 2001 Office Action and a notice of appeal responding to the June 2001 Office Action were filed on the same day but have since gone missing from PTO files. The date given for both documents is January 8, 2002, which is the date of the PTO postcard acknowledging receipt of the documents.

These “Extension of Time” and “Notice of Appeal” documents appeared in the original file history and were the Applicant’s request for an extension of time to respond to the June 2001 Office Action, as well as the Applicant’s timely response. Importantly, as explained above, the extension was self-executing and effective when the Applicant filed the document reflected in the file wrapper. These documents – which are missing from the official file history through no fault of the Applicant or Complainants – constitute evidence of (1) an extension of time that kept

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<sup>14</sup> Given Respondents’ knowledge of these documents it was not foreseeable that Respondents would seriously contest the priority date of the ‘867 Patent, or challenge the ALJ’s sound factual finding that the ‘661 Application was not abandoned prior to the filing of the ‘295 Application. Accordingly, these documents were not admitted as exhibits at the hearing, but are nonetheless part of “the record” under Commission Rule 210.38. *See* note 13, *supra*.

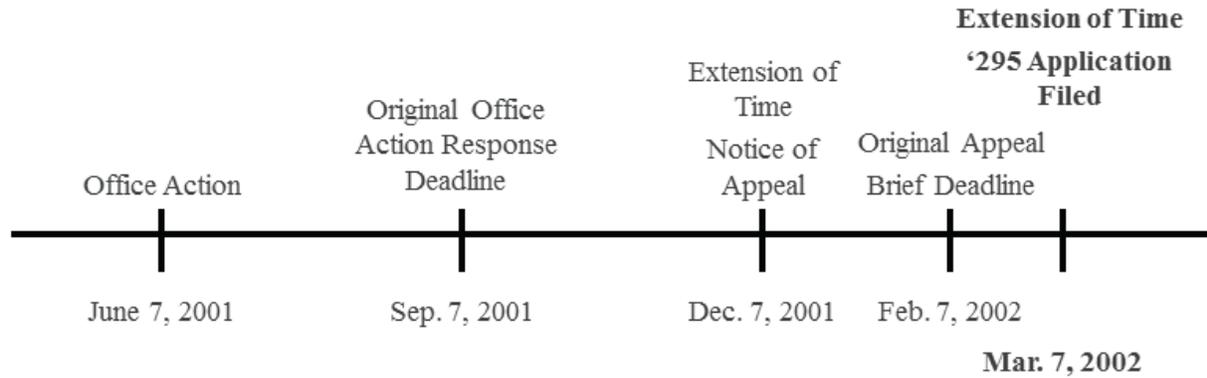
the '661 Application pending in December 2001, and (2) a response to the June 2001 office action within the six-month statutory deadline.

The time to file an appeal brief after the notice of appeal is two months. 37 C.F.R. § 41.37(a). The file wrapper contains another petition for extension of time dated March 7, 2002, the day the '867 Patent was filed, requesting a one-month extension of time. RX-1165 ('661 File History) at 227. Again, this petition was self-executing and automatically extended the deadline to file an appeal brief until March 7, 2002. The PTO issued a Notice of Abandonment over a year later on October 27, 2003. *Id.* at 233. While the Notice of Abandonment identifies “Applicant’s failure to timely file a proper reply to the Office letter mailed on 07 June 2001” as the basis for abandonment (*id.*), this is a ministerial error by the PTO. As discussed above, the Applicant filed a notice of appeal on December 7, 2001, which constitutes a response sufficient to keep prosecution underway. 37 C.F.R. § 41.31(a)(1). The time to file an appeal brief after the notice of appeal is two months. 37 C.F.R. § 41.37(a). However, as discussed above, the March 7, 2002 extension of time – dated three months after the December 7, 2001 notice of appeal – extended the deadline by one month. Thus, the earliest date on which the '661 Application could have been abandoned was March 7, 2002, the day U.S. Patent Application No. 10/092,295 (“the '295 Application”), which later issued as the '867 Patent, was filed. In other words, it was the failure to respond *after the extensions of time* that led to abandonment. On March 7, 2002, both applications were pending.

The '295 Application claimed priority to the '661 Application from the outset. JX-0006 ('867 File History) at 37, 44. In its Notice of Allowability for the '867 Patent, the PTO acknowledged the claim of foreign priority and indicated that certified copies of the required priority documents had been received. *Id.* at 187. Thus, the priority date of the asserted claims

of the '867 Patent is March 6, 1993.

The key events in the prosecution of the '661 Application are summarized in the timeline below.



**C. The PTO Treated the Extension of Time as Effective By Allowing Prosecution to Continue.**

Finally, overwhelming circumstantial evidence confirms that the PTO treated the extension of time as effective. This evidence includes the fact that substantive prosecution continued after December 2001, including an additional petition for extension of time (RX-1165 ('661 File History) at 227) and an Examiner Interview (*id.* at 229-232). Further, the PTO did not issue a Notice of Abandonment until October 2003, some twenty months after the December 2001 deadline. Finally, the PTO explicitly accepted and acknowledged the claim of priority in the Notice of Allowability for the '867 Patent, and thus the PTO determined that the '661 Application was pending at the time the '295 Application was filed. JX-0006 ('867 File History) at 187. This factual determination by the PTO that the claims of the '867 Patent are entitled to the filing date of the '661 Application is entitled to deference. *See Technology Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1330 (2008) (holding that where an issue is addressed by the PTO, courts should defer to the PTO's expertise). Because the PTO determined that the claim of

priority was proper, Respondents, as the parties seeking to prove invalidity by clear and convincing evidence, have “the added burden of overcoming the deference due to the PTO.” *Id.* (quoting *PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1304 (Fed. Cir. 2008)).

In sum, Respondents cannot demonstrate that the ‘661 Application was abandoned in December 2001 because the record evidence and applicable rules confirm that it was not. The Applicant automatically extended time twice and responded to the June 2001 office action within six months. The Examiner allowed the prosecution to proceed consistent with these extensions of time and the response. The ‘661 Application was pending when the ‘295 Application was filed.

## **XII. QUESTION 11**

*Please discuss and cite any record evidence of the standard essential nature of the ‘663, the ‘958, and the ‘867 patents.*

### **A. The Asserted Claims of the ‘663 Patent Represent the Only Commercially Feasible Way To Decode UEGk Index Values as Required for H.264 Standard Compliance.**

The record evidence demonstrates that the methods and system described in the asserted claims of the ‘663 Patent represent the only commercially feasible way to decode UEGk index values as required for H.264-Standard compliance. Specifically, the lack of a feasible commercial alternative is proven by a comprehensive review of the theoretical alternatives to the asserted claims of the ‘663 Patent. In addition, the adoption of the claimed methods of the ‘663 Patent into the H.264.2 Reference software corroborates this conclusion. And finally, former Respondent MediaTek’s inability to design around the asserted claims of the ‘663 Patent provides decisive confirmation that there is no other commercially-feasible way to decode the UEGk index values as required for H.264 Standard compliance.

**1. No Theoretical Alternative to the Asserted Claims of the ‘663 Patent Is Commercially Feasible for Decoding UEGk Index Values as Required for H.264 Compliance.**

The essentiality of the asserted ‘663 Patent claims to practicing the H.264 Standard commercially is proven by the fact that none of the theoretical alternatives to the asserted claims of the ‘663 Patent is commercially feasible. In fact, only one such theoretical alternative – using a hypothetical “look-up table” – has been identified by Funai in this Investigation. CX-1597C (Reinman WS) at Q&A 223. Implementing such a “look-up table,” however, is wholly unrealistic from a commercial engineering perspective. *Id.*

For example, index values “mvd\_10” and “mvd\_11” are two of the most common UEGk index values described in the H.264 Standard. *See* ID at 136; CX-1597C (Reinman WS) at 78, Q&A 224. Given that index values “mvd\_10” and “mvd\_11” each represent the difference between a motion vector and its prediction, the range of possible values for the horizontal component of UEGk-encoded index values “mvd\_10” and “mvd\_11” pursuant to the H.264 Standard is –16383 to 16383. *See* CX-0642 (H.264 Standard, Jan. 2012) at 124, § 7.4.5.1; CX-1597C (Reinman WS) at Q&A 224. Taking into account various additional considerations, the largest potential value for “mvd\_10” and “mvd\_11” would be 16375, which has a UEGk binarized value of 11111111111111111011111111111111. CX-1597C (Reinman WS) at Q&A 224. The minimum value would be 0, which would have UEGk binarized value of 0. *Id.*

An H.264-compliant commercial decoder would have to be able to perform inverse binarization of UEGk syntax elements spanning this entire range of potential values for “mvd\_10” and “mvd\_11.” *Id.* at Q&A 225. Regardless of how one attempts to decode this range of potential index values using a “look-up table,” it cannot be done in a commercially feasible

way. *Id.* This is especially true for Blu-ray disc players and “smart” televisions like the Accused Funai H.264 Products where margins are extremely tight and cost-efficiency is paramount. *Id.*

More specifically, there are a finite number of options one could try using a “look-up table” approach for decoding the “mvd\_10” and “mvd\_11” index values from the H.264 Standard. *Id.* at Q&A 226. A first theoretical option would be to keep the entire binary UEGk codeword together as a single pattern, and use that entire codeword as an index for a look-up table. *Id.* As discussed previously, the largest potential binarized value would have 34 bits, and the table to form this lookup would either need an extremely large size for the possible  $2^{34}$  entries or need a complex lookup indexing scheme to extract this possible range of values. *Id.* Such a complicated approach would add significant delay versus practicing the asserted claims of the ‘663 Patent. *Id.* Millions of these UEGk index values, however, must be decoded in a matter of minutes. *Id.* Thus, no rational engineer would choose a “look-up table” approach that would add significant delay to an operation that has to be performed so frequently in such a small amount of time. *Id.*

Even worse, because each value in such a “look-up table” would need 15 bits to handle the dynamic range of values from –16383 through 16383, such a structure would require the storage of *gigabytes* of data for this one brief stage of the decoding process. *Id.* This would be astronomically expensive for just this one discrete function, and send the cost of the decoder through the proverbial roof. *Id.* at Q&A 227. In contrast, practicing the asserted claims of the ‘663 Patent would require virtually no data storage and fractions of a penny to implement in either hardware or software. *Id.* As such, there is no chance whatsoever that any commercial decoders used in an H.264-compliant product would employ this “look-up table” approach instead of practicing the asserted claims of the ‘663 Patent. *Id.*

The other theoretical “look-up table” approaches are equally unrealistic from an engineering perspective. For example, another theoretical approach would be to break the binarized UEGk index value down into pieces as described in the asserted claims of the ‘663 Patent, but still keep some patterns together. *Id.* at Q&A 228. Here, the first and second patterns could be left-concatenated together or the second and third patterns could be left-concatenated. *Id.* In this theoretical approach, the look-up indexing scheme could be either “naïve” (*i.e.*, indexing a table with a 20-bit index or a 24-bit index when combining the first and second patterns and the second and third patterns respectively) or it could be more “complex.” *Id.* Yet neither the “naïve” approach nor the “complex” approach is a viable alternative to practicing the asserted claims of the ‘663 Patent.

Specifically, in the case of the “naïve” approach, there would still be delay problems, and the required storage size would still be on the order of *megabytes*. *Id.* at Q&A 229. Again, practicing the asserted claims of the ‘663 Patent imposes almost no delay, requires virtually no data storage, and costs fractions of a penny to implement in either hardware or software. *Id.* As such, there is no chance whatsoever that any H.264 commercial decoder would employ this “naïve” look-up table approach instead of practicing the asserted claims of the ‘663 Patent. *Id.*

Likewise, for the more “complex” approach, the same delay issues described previously exist. Again, no rational engineer would ever choose a “look-up table” approach that would add such significant delay to an operation that has to be performed millions of times in a matter of minutes. *Id.* at Q&A 230. Moreover, this theoretical approach is not an “alternative” at all, as such a “complex” lookup-table strategy would still need to break the UEGk binarized codeword down into its constituent patterns, and thus would either practice the asserted claims of the ‘663 Patent literally, or be insubstantially different and thus practice under the doctrine of equivalents.

*Id.* In fact, as discussed below, the infeasibility of such a complex approach is demonstrated by [REDACTED]. *Id.*

Thus, a comprehensive review of all theoretical alternatives to practicing the asserted ‘663 Patent claims proves that there are no feasible commercial alternatives to the asserted claims of the ‘663 Patent for decoding UEGk index values as required for H.264 Standard compliance.

**2. The Use of the Claimed Methods in the H.264.2 Reference Software Corroborates the Commercial Essentiality of the Asserted ‘663 Patent Claims.**

The practice of the asserted ‘663 Patent claims by the H.264.2 Reference software provided with the H.264 Standard itself corroborates the standard essential nature of the asserted claims. As acknowledged by the ALJ, the “H.264 Standard itself provides guidance with respect to the actual implementation of a decoder that performs decoding of the UEGk index values described in the H.264 Standard” and this guidance takes the form of “reference software called ‘H.264.2.’” ID at 136 (citing CX-0644 (H.264.2 Reference Manual and Software, Jan. 2012)). The ALJ further acknowledges that “[t]his reference software sets forth, among other things, the presumptive method for decoding the UEGk index values described in the H.264 Standard.” ID at 137 (citing CX-1597C (Reinman WS) at Q&A 174.)

The specific source code sections in the H.264.2 Reference Software used for decoding UEGk index values satisfy the limitations of each of the asserted claims of the ‘663 Patent. CX-1597C (Reinman WS) at Q&A 178-210. In particular, the record evidence shows that the methodology used for decoding UEGk index values in the H.264.2 Reference Software practices each of the limitations of Claims 1-9 of the ‘663 Patent, and that a product or system that implements the methodology disclosed in the H.264.2 Reference Software for decoding UEGk

index values would satisfy all of the limitations of Claim 11 of the '663 Patent. *See* CX-1597C (Reinman WS) at Q&A 178-210.

Thus, the fact that the only reference software provided in conjunction with the H.264 Standard itself practices the asserted '663 Patent claims constitutes strong corroborating evidence of the standard essential nature of the asserted claims for decoding H.264-compliant UEGk index values.

3.

**Confirms There Is No Commercially Feasible Alternative to the Asserted Claims of the '663 Patent.**

Finally, the impossibility of designing a commercially-feasible H.264-compliant decoder that does not practice the asserted claims of the '663 Patent is confirmed by

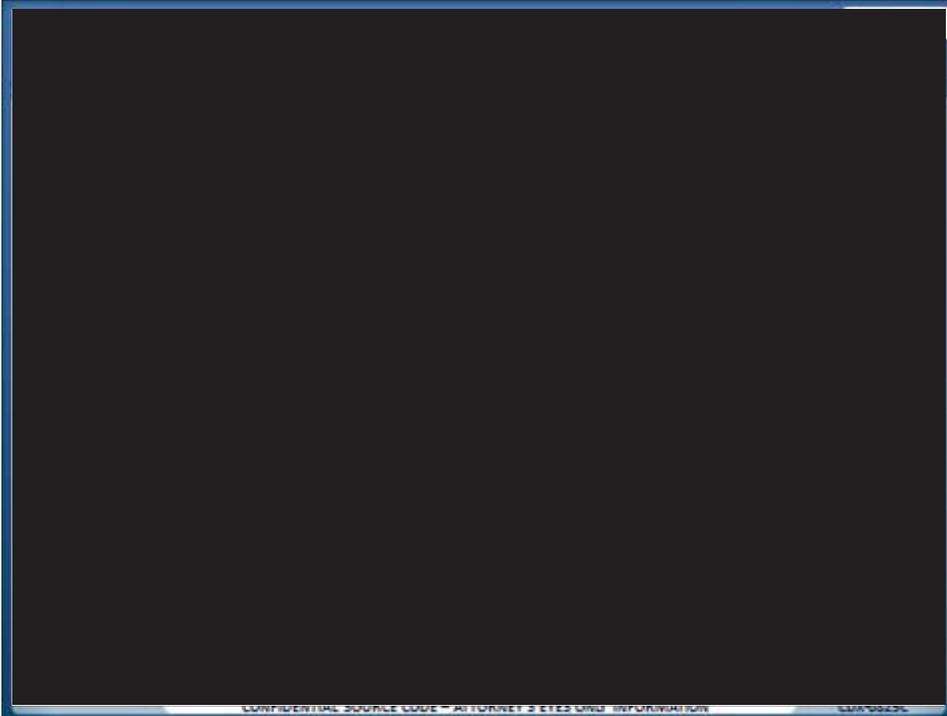
. The original Complaint was filed in this Investigation on March 12, 2012. CX-1597C (Reinman DWS) at 80, Q&A 231.

JX-0019C ( Dep.) at 82:22-88:20; CX-1597C (Reinman WS) at Q&A 231; Schonfeld, Tr. 1609:11-1611:22.<sup>15</sup>

shown in CDX-0825 (Reinman 026) below:

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<sup>15</sup> The relevant source code for the is found at CX-0559C ( Source Code) at SC0002034-2129, and CX-0559C ( Source Code) at SC0002084-85.



Predictably, [REDACTED]

[REDACTED]

[REDACTED] See CX-0934C ([REDACTED]

[REDACTED] [REDACTED] [REDACTED]) at 101-06; Schonfeld, Tr. 1612:4-9. In fact, there is

no evidence that a single physical circuit has even been manufactured using [REDACTED]

[REDACTED]. Schonfeld, Tr. 1612:16-21. In contrast, [REDACTED]

[REDACTED]

[REDACTED]. See CX-0934C ([REDACTED] [REDACTED] [REDACTED] [REDACTED]) 101-06.<sup>16</sup>

[REDACTED]

[REDACTED]

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<sup>16</sup> Even if [REDACTED]

[REDACTED], would still practice one or more claims of the '663 Patent under the doctrine of equivalents. CX-1597C (Reinman WS) at Q&A 235-255.

confirms that there is no commercially feasible alternative. Therefore, for all commercial purposes, the asserted claims of the '663 Patent are essential to the H.264 Standard.

**B. The '958 Patent is Essential to the 802.11 Standard.**

The evidence in the record showing that the '958 Patent is essential to practice the 802.11 Standard includes the detailed findings by the ALJ showing that each and every element of each asserted claim of the '958 Patent is met by an aspect of the 802.11 Standard under Complainants' proposed constructions. ID at 181-205. Complainants demonstrated through extensive analysis of Respondents' source code and other technical documents that the Accused Products implement the 802.11 Standard and infringe the asserted claims of the '958 Patent. Further, Complainants' expert, Dr. Negus, testified that all products that claim to have an 11 Mb/s CCK transmit capability that are in compliance or interoperable with any of the IEEE 802.11 b, 802.11g, or 802.11n standards are, at minimum, more likely than not, and indeed highly likely, to infringe at least Claims 32 and 35 of the '958 Patent. CX-1643C (Negus RWS) at 4, Q&A 11; 8, Q&A 42.

In addition, the IEEE specifically selected Dr. van Nee's CCK modulation technique claimed in the '958 Patent as the modulation technique for the 802.11b Standard. (*See, e.g.*, CX-0069.) The 802.11b Standard itself is thus based on Dr. van Nee's invention.

Further, LSI employee ██████████ testified that the '958 Patent is a standard essential patent. (CX-1598C (██████ WS) at Q&A 28-38, Q&A 46-49.)

Accordingly, the '958 Patent is essential to the 802.11 Standard.

**C. The '867 Patent is Essential to the 802.11 Standard.**

The evidence in the record showing that the '867 Patent is essential to practice the 802.11 Standard includes the detailed findings by the ALJ showing that nearly every element of each asserted claim of the '867 Patent is met by an aspect of the 802.11 Standard under Complainants'

proposed constructions. ID at 242-286. Complainants demonstrated through extensive analysis of Respondents' source code and other technical documents that the Accused Products implement the 802.11 Standard and infringe the asserted claims of the '867 Patent. Further, Complainants' expert, Dr. Negus, testified that all products that claim compliance or compatibility with any of the IEEE 802.11 standards are, at minimum, more likely than not, and indeed highly likely, to infringe at least at least Claims 20, 23-24, 26-28, 32-35, 37-40, 47, 49-52, and 58-61 of the '867 Patent. CX-1643C (Negus RWS) at 4, Q&A 11; 8, Q&A 42.

Further, LSI employee [REDACTED] testified that the '867 Patent is a standard essential patent. (CX-1598C ([REDACTED] WS) at Q&A 28-38, Q&A 46-49.)

Accordingly, the '867 Patent is essential to the 802.11 Standard.

### **XIII. QUESTION 12**

*Please discuss, in light of the statutory language, legislative history, the Commission's prior decisions, and relevant court decisions, including InterDigital Commc'ns, LLC v. Int'l Trade Comm'n, 690 F.3d 1318 (Fed. Cir. 2012), 707 F.3d 1295 (Fed. Cir. 2013), and Microsoft Corp. v. Int'l Trade Comm'n, Nos. 2012-1445, -1535 (Oct. 3, 2013), whether establishing a domestic industry based on licensing under 19 U.S.C. §1337(a)(3)(C) requires proof of "articles protected by the patent" (i.e., a technical prong). If so, please identify and describe the evidence in the record that establishes articles protected by the asserted patents.*

#### **A. The Statutory Text, Legislative History, and Commission and Federal Circuit Precedent are Clear: Establishing a Domestic Industry Based on Licensing Activities Does Not Require a Technical Prong.**

The statutory language and legislative history of 19 U.S.C. §1337(a)(3)(C) make clear that there is no technical prong requirement when a complainant seeks to establish a domestic industry based on its licensing activities. The Commission and Federal Circuit have repeatedly and consistently upheld Congress' goal in revising the statute in 1988 to include a licensing-based domestic industry. Further, by denying *certiorari*, the Supreme Court declined to alter this

interpretation.<sup>17</sup> Any interpretation otherwise, absent a specific act by Congress, would directly frustrate Congress' express intent in the 1988 amendment and would be without statutory authority.

Title 19 U.S.C. § 1337 prohibits “[u]nfair practices in import trade” including proscribed acts with respect to articles that “infringe a valid and enforceable United States patent . . . .” 19 U.S.C. § 1337(a). These prohibitions in Section 337, however, “apply only if an industry in the United States, *relating to the articles protected by the patent*, copyright, trademark, mask work or design concerned, exists or is in the process of being established.” 19 U.S.C. § 1337(a)(2) (emphasis added). In particular, such an industry “shall be considered to exist if there is in the United States, with respect to the articles protected by the patent . . . concerned:

- (C) substantial investment in [the patent’s] exploitation, including engineering, research and development, or licensing.

19 U.S.C. § 337(a)(3).

In order to interpret and understand § 337(a)(3)(C) as Congress intended, one must review it in context with the legislative history. Believing that the ITC was too rigidly applying the domestic industry requirement, in 1988 Congress expanded the types of activities that could satisfy the domestic industry threshold to include non-manufacturing activities, such as, but not limited to, licensing. H.R. Rep. No. 40, 100th Cong., 1st Sess. Pt. 1 at 157 (1987) (“House Report”). “In amending section 337 in 1988 to include subsection (C), Congress intended to liberalize the domestic industry requirement so that it could be satisfied by all holders of U.S. intellectual property rights who are engaged in activities genuinely designed to exploit their

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<sup>17</sup> *InterDigital Commc’ns, LLC v. Int’l Trade Comm’n*, 690 F.3d 1318 (Fed. Cir. 2012) (“*InterDigital P*”); *en banc rehearing denied* 707 F.3d 1295 (Fed. Cir. 2013) (“*InterDigital IP*”); *cert. denied*, \_\_\_ S.Ct. \_\_\_, 2013 WL 5610714 (Mem) (Oct. 15, 2013).

intellectual property in the United States.” *Certain Multimedia Display and Navigation Devices and Systems, Components Thereof, and Products Containing the Same*, Inv. No. 337-TA-694, Comm’n Op. at 7, (Aug. 8, 2011) (internal citations omitted).<sup>18</sup>

Indeed, with respect to licensing activities, the Congressional goal in amending Section 337 was “to protect from infringement those holders of U.S. intellectual property rights who are engaged in activities genuinely designed to exploit their intellectual property . . . .” House Report at 157-8; S. Rep. No. 71, 100th Cong., 1st Sess., at 129-130 (1987). The lead legislators to the 1988 amendments explained that section 337 relief would be available for companies, like Complainants here, that “make substantial investments in the creation of intellectual property and then license their creation,” but do not necessarily “exploit their invention by production in the United States.” 134 Cong. Rec. S4906 (Apr. 27, 1988) (Sen. Lautenberg); *see also* 132 Cong. Rec. 7118-19 (1986) (Rep. Kastenmeier).

With that understanding, the Commission has consistently held that a domestic industry can consist of “licensing activities” alone, as long as they are “substantial” and “related to the asserted patent.” *Certain Multimedia Display and Navigation Devices and Systems, Components Thereof, and Products Containing the Same*, Inv. No. 337-TA-694, Comm’n Op. at 7, (Aug. 8, 2011) (“*Navigation Devices*”). The purpose of a patentee (like Complainants here) that seeks to license its patent(s) is to obtain a return on its research and development investment<sup>19</sup> by granting the right to other companies to make, use or sell products that utilize the patented

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<sup>18</sup> For a more detailed analysis of the legislative history relating to section 337(a)(3)(C), and Congress’ intent to broaden the domestic industry threshold to include licensing activities (without a technical prong), see *InterDigital I*, 690 F.3d at 1329-30; *InterDigital II*, 707 F.3d at 1300; *Certain Semiconductor Chips with Minimized Chip Package Size Products and Products Containing Same*, Inv. No. 337-TA-432, Order No. 13, at 4-5, 2001 WL 1877710, at \*3, \*6-7 (2001) (unreviewed).

technology (*i.e.*, “articles protected by the patent”). Such potential licensees either have products already in the market that may practice the patent, or they may be entering the market with products that may practice the patent. Either way, obtaining a license to the patent gives the potential licensee freedom to operate within the market without worry of patent infringement. As long as the licensing activities clearly relate (*i.e.*, have a nexus) to the asserted patents, occur in the United States, and are substantial, then the patent holder should be able to satisfy the domestic industry threshold of section 337(a)(3)(C). *Id.* The Commission has repeatedly explained and affirmed this interpretation for over a decade.<sup>20</sup>

The Federal Circuit has addressed this issue (twice) and affirmed (twice) the Commission’s interpretation of § 337(a)(3)(C) as consistent with the statutory text and Congressional intent. As the Federal Circuit held in *InterDigital I*,

Section 337(a)(3) makes clear that the required United States industry *can be based on patent licensing alone*; it does not require that the articles that are the objects of the licensing activities (*i.e.*, the “articles protected by the patent”) be made in this country. That is, the domestic industry requirement is satisfied if there is a domestic industry based on “substantial investment in [the

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<sup>19</sup> Here, as noted by the ALJ, “each asserted patent was developed in-house at Complainants’ facilities, or their predecessor’s.” ID at 319.

<sup>20</sup> See *Certain Semiconductor Chips with Minimized Chip Package Size and Products Containing Same*, Inv. No. 337-TA-432, Order No. 13, 2001 WL 1877710 (2001); *Certain Digital Processors and Digital Processing Systems, Components Thereof, and Products Containing Same*, Inv. No. 337-TA-559, Order No. 24 (June 21, 2007); *Certain Nitrile Gloves and Certain Nitrile Rubber Gloves*, (consolidated), Inv. No. 337-TA-608 and 337-TA-612, Final Initial Determination (Aug. 25, 2008); *Certain Semiconductor Chips*, Inv. No. 337-TA-605, Order No. 31, 2008 WL 4699246 (Sept. 16, 2008); *Certain 3G Mobile Handsets and Components Thereof*, Inv. No. 337-TA-613 Initial Determination 2009 WL 2329189, at \*4 (Mar. 10, 2009), *affirmed InterDigital Comm’ns, LLC v. Int’l Trade Comm’n*, 690 F.3d 1318 (Fed. Cir. 2012); *en banc rehearing denied* 707 F.3d 1295 (Fed. Cir. 2013); *cert. denied*, \_\_\_ S.Ct. \_\_\_, 2013 WL 5610714 (Mem) (Oct. 15, 2013); *Certain Short Wavelength Light Emitting Diodes*, Inv. No. 337-TA-640, Order No. 72, 2009 WL 1640140 at \*3-\*5 (May 8, 2009); *Certain Random Semiconductor Chips Having Synchronous Dynamic Random Access Controllers*, Inv. No. 337-TA-661, Order No. 21, 2009 WL 6608683, at \*3; *Certain Computer Products*, Inv. No. 337-TA-628, Initial Determination, 2009 WL 1021539 at \*66-67 (2009).

patent's] exploitation" where the exploitation is achieved by various means, including "licensing."

*InterDigital I*, 690 F.3d at 1318 (emphasis added). In denying the respondent/intervenor's request for rehearing *en banc*, the Federal Circuit reiterated that:

[S]ection 337 makes relief available to a party that has a substantial investment in exploitation of a patent through either engineering, research and development, or licensing. *It is not necessary that the party manufacture the product that is protected by the patent, and it is not necessary that any other domestic party manufacture the protected article.* As long as the patent covers the article that is the subject of the exclusion proceeding, and as long as the party seeking relief can show that it has sufficiently substantial investment in the exploitation of the intellectual property to satisfy the domestic industry requirement of the statute, that party is entitled to seek relief under section 337.

*InterDigital II*, 707 F.3d at 1303-4 (emphasis added). The Commission adhered to this interpretation of the statute in litigation before the Federal Circuit and Supreme Court.

*InterDigital II*, ITC's Resp. to Reh'g Pet. at 8; Br. for the Federal Respondent in Opposition, *Nokia Inc. v. ITC*, No. 12-1352, 2013 WL 4822161 (U.S. Sept. 9, 2013) ("ITC's Br."). Before the Supreme Court, the government / Commission explained that the plain statutory text requires only that the complainant demonstrate "that its economic investment is substantial and that the relevant licensing pertains to the same patent or patents that the imported goods are alleged to infringe." ITC Br. at 12 (citation omitted). In front of the Supreme Court, the Commission again rejected the notion that proof of actual production of goods (*i.e.*, a technical prong) is necessary to satisfy the licensing element of Section 337(a)(3)(C). *Id.* at 9-10. In the end, the Commission, the Federal Circuit (twice) clearly and unequivocally affirmed that complainant InterDigital satisfied the domestic industry requirement based on its licensing efforts dedicated to the asserted patents, *without* showing that any of its licensees (or any other entity) produced

articles that practiced the asserted patents, *i.e.*, there is no technical prong *requirement* for licensing activities.

The Commission and Federal Circuit’s interpretation of the licensing element of § 337(a)(3)(C) is the only interpretation that conforms with the statutory text and the intent of Congress. Any other interpretation of the statute would essentially eliminate “licensing” as a basis for establishing a domestic industry, and contravene the intent of Congress to make § 337 available to companies that “make substantial investments in the creation of intellectual property and then license their creation,” but do not necessarily “exploit their invention by production in the United States.” 134 Cong. Rec. S4906 (Apr. 27, 1988) (Sen. Lautenberg); *see also* 132 Cong. Rec. 7118-19 (1986) (Rep. Kastenmeier).

**B. The Federal Circuit’s Decision in *Microsoft* Does Not Relate to Licensing Under Section 337(a)(3)(C) and Is, at Most, Dicta.**

In *Microsoft Corp. v. Int’l Trade Comm’n*, Nos. 2012-1445, -1535 (Oct. 3, 2013) (“*Microsoft*”), the relevant issue on appeal was whether complainant Microsoft had established a domestic industry based on its research and development. *Microsoft* at \*10-11. The ALJ, Commission and the Federal Circuit held that, although Microsoft had made a substantial investment in its mobile phone operating system, Microsoft failed to show that the operating system was used in a product in such a way that practiced the asserted patent. *Id.* In upholding the Commission’s finding on the domestic industry requirement, the court explained:

There is no question about the substantiality of Microsoft’s investment in its operating system or about the importance of that operating system to mobile phones on which it runs. But that is not enough under the statute. Section 337, though not requiring that an article protected by the patent be produced in the United States, unmistakably requires that the domestic company’s substantial investments relate to actual “articles protected by the patent.” 19 U.S.C. §§ 1337(a)(2), (3). A company seeking section 337 protection must therefore provide evidence that its substantial domestic investment -- *e.g.*, in research and development -- relates

to an actual article that practices the patent, regardless of whether or not that article is manufactured domestically or abroad.

*Id.* at 11. The *Microsoft* decision, however, has no bearing on the instant investigation because it does not apply to establishing the domestic industry requirement through licensing activities. The only question presented was whether Microsoft’s research and development related to the exploitation of the patent through the use of Microsoft’s software in downstream smart phones, *i.e.*, a nexus between the research and development and the patent, which Motorola tried (but failed) to do.<sup>21</sup>

“Research and development” and “licensing” are two entirely different ways to exploit an intellectual property right under § 337(a)(3)(C). As the Federal Circuit held in *Microsoft*, in order to establish the nexus between the research and development activities/investments and the asserted patent, a complainant must show that the research and development activities relate to an article protected by the patent, whether in physical form or inchoate. The “article protected by the patent” is the nexus required by the statute between the domestic activities asserted and the patent(s), and nothing more. The research and development does not, *per se*, have to be confined to the patented technology but can relate to other aspects of articles that eventually practice the asserted patent.<sup>22</sup>

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<sup>21</sup> While Complainants maintain that the *Microsoft* decision is inapplicable to the instant issue, *i.e.*, whether there is a technical prong requirement in order to satisfy the “licensing” element of the domestic industry requirement, Complainants also caution against a broad reading of the *Microsoft* decision to apply to anything but the narrow issue presented therein. Indeed, reading *Microsoft* broadly to always require an article protected by the patent in order to satisfy section 337(a)(3)(C) is inconsistent with the plain text of the statute, which expressly states that domestic industries can be “in the process of being established,” and vitiates Congress’ express intent to permit universities and other inventors, who do not manufacture goods, to avail themselves of section 337 by, among other things, licensing their patents.

<sup>22</sup> See *Certain Video Game Systems and Wireless Controllers and Components Thereof*, Inv. No. 337-TA-770, Comm’n Op. at (October 2013) (“The Commission has held that in certain

Licensing activities, however, are different. Although “licensing” was never mentioned in the *Microsoft* decision, a brief portion of the oral argument in *Microsoft* focused on whether there was a difference between the “licensing” and “research and development” elements of § 337(a)(3)(C). In response, counsel for respondent/intervenor Motorola<sup>23</sup> aptly argued that licensing under § 337(a)(3)(C) is different because one can tie the licensing activities to the patent directly by, for example, looking at the license and the negotiations that led to the license. *Microsoft*, Oral Argument at 36:33-37:45.<sup>24</sup> Indeed, as explained above, Congress sought to broaden the domestic industry threshold so that manufacturing patented articles would not always be required but, rather, exploitation of the intellectual property right through domestic licensing activities would suffice.

The Commission and Federal Circuit precedent has repeatedly upheld that, in establishing a licensing-based domestic industry under § 337(a)(3)(C), it is not required to show production of an article protected by the patent, and, what is at best *dicta* from the Federal Circuit in *Microsoft*, should not reverse this established precedent and proper interpretation of the statute.

**C. There is Ample Evidence of Record that Establishes that Several of Complainants’ Licensees Make, Use or Sell Products Protected by the Asserted Patents.**

Although the statute, the legislative history and the Commission and Federal Circuit precedent do not require a complainant to prove the technical prong when establishing a domestic industry based on licensing activities, there is ample evidence of record in this investigation proving that numerous licensees practice the asserted patents through the

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circumstances, the realities of the marketplace require a modification of the principle that the domestic industry is defined by the patented article.”).

<sup>23</sup> Coincidentally, counsel for respondent Motorola in the *Microsoft* case, Quinn Emanuel Urquhart & Sullivan, LLP, also represents the Funai Respondents in this investigation.

manufacture and/or sale of products. Indeed, ██████████ Sony was found to infringe the asserted '867 Patent by a district court. *See e.g.*, CX-1617 (district court finding ██████████ Sony infringes the '867 Patent). Subsequently, Sony ██████████ ██████████.

Similarly, the record clearly shows that licensee ██████████ researches, develops, markets and sells ██████████ devices in the United States that are in compliance or interoperable with any of the IEEE 802.11b, 802.11g, or 802.11n standards. *See* JX-028C (██████████ at 30:25-31:4, 42:24-43:6; ID at 330 (“██████████ has designed several licensed 802.11 compliant ██████████ in the United States, including the ██████████.”)); CX-649 to CX-658 (data sheets, product manuals, and certificates of compliance with IEEE 802.11 for the ██████████ products). As explained at trial by Complainants’ expert, Dr. Kevin Negus, all products that are in compliance or interoperable with any of the IEEE 802.11b, 802.11g, or 802.11n standards are, at minimum, more likely than not, and indeed highly likely, to infringe at least Claims 32 and 35 of the '958 Patent. (CX-1643C (Negus RWS) at pg. 4, Q&A 11; pg. 8, Q&A 42). Similarly, products that claim compliance or compatibility with any of the IEEE 802.11 standards are, at minimum, more likely than not, and indeed highly likely, to infringe at least at least Claims 20, 23-24, 26-28, 32-35, 37-40, 47, 49-52, and 58-61 of the '867 Patent. *Id.* Such evidence and expert testimony, unrebutted as it relates to ██████████ products, establish that licensee ██████████ sells products protected by the asserted '958 and '867 Patents.

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<sup>24</sup> The *Microsoft* oral argument before the Federal Circuit panel can be found at <http://oralarguments.cafc.uscourts.gov/default.aspx?fl=2012-1445.mp3>.

Finally, the record shows that, as part<sup>25</sup> of their substantial licensing activities in the United States, Complainants purchase, reverse engineer and [REDACTED] [REDACTED] potential licensees practice each asserted “exemplary” patent. *See*, CX-1083C (licensing proposal and “reverse engineering activities” showing [REDACTED] use of the asserted ‘958 and ‘867 Patents); CX-1217C and CX-1218C (licensing proposals to [REDACTED] showing its use of the asserted ‘087 Patent); CX-1159C (licensing proposal showing [REDACTED] [REDACTED] products that practice the asserted ‘663, ‘867 and ‘958 Patents); CX-1508C (licensing proposal [REDACTED] products that practice the asserted ‘867 and ‘958 Patents); CX-1194C (licensing proposal showing [REDACTED] products that practice the asserted ‘663 Patent); CX-1152C (licensing proposal [REDACTED] [REDACTED] products that practice the ‘087 Patent); CX-1196C (licensing proposal [REDACTED] [REDACTED] products that practice the ‘087 Patent); CX-1185C (licensing proposal showing [REDACTED] practices the asserted ‘087 Patent); CX-1078C (licensing proposal [REDACTED] [REDACTED] showing how its products practice the asserted ‘958 Patent.). Based on these and other technical proposals of record, over [REDACTED] major companies have licensed the asserted patents, including, among others, [REDACTED] [REDACTED]. CX-0027C ([REDACTED] PLA); CX-0693C ([REDACTED] PLA); CX-0034C ([REDACTED] PLA Amendment); CX-0398C ([REDACTED] PLA); CX-0036C ([REDACTED] PLA); CX-0038C ([REDACTED] PLA); CX-0039C ([REDACTED] PLA); CX-0026C ([REDACTED] PLA); CX-0704C ([REDACTED] PLA); CX-0042C ([REDACTED] PLA); CX-0667C ([REDACTED] PLA); CX-0668C ([REDACTED] PLA); CX-0028C ([REDACTED] PLA); CX-

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<sup>25</sup> Complainants also seek to license, and have licensed, companies that intend to produce products that may be covered by Complainants’ asserted patents. *See* CX-1078C ([REDACTED] letter

0672C ( [REDACTED] PLA); CX-0694C ( [REDACTED] PLA); CX-0673C ( [REDACTED] PLA);  
CX-0674C ( [REDACTED] PLA); CX-0035C ( [REDACTED] PLA); CX-0695C ( [REDACTED]  
PLA); CX-0677C ( [REDACTED] PLA); CX-0682C ( [REDACTED] PLA); CX-0684C ( [REDACTED]  
[REDACTED] PLA); CX-0703C ( [REDACTED] PLA); CX-0669C ( [REDACTED] PLA); CX-0670C  
( [REDACTED] PLA); CX-0698C ( [REDACTED] PLA); CX-0705C ( [REDACTED] Agreement);  
CX-0676C ( [REDACTED] PLA); CX-0696C ( [REDACTED] PLA); CX-0681C ( [REDACTED]  
[REDACTED] PLA Amendment); CX-0678C ( [REDACTED] 1990 PLA); and CX-0025C ( [REDACTED]  
PLA).

Dated: November 1, 2013

Respectfully submitted,

*/s/ David E. Sipiora*

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David E. Sipiora  
Kristopher L. Reed  
Matthew C. Holohan  
Jeffrey M. Connor  
Laura K. Mullendore  
KILPATRICK TOWNSEND & STOCKTON LLP  
1400 Wewatta St., Suite 600  
Denver, CO 80202  
Telephone: (303) 571-4000

Jordan Trent Jones  
KILPATRICK TOWNSEND & STOCKTON LLP  
1080 Marsh Road  
Menlo Park, CA 94025  
Telephone: (650) 326-2400

David F. Nickel  
FOSTER, MURPHY, ALTMAN & NICKEL, PC  
1899 L Street, N.W., Suite 1150  
Washington, DC 20036  
Telephone: (202) 822-4100

*Counsel for Complainants  
LSI Corporation and Agere Systems LLC*

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advising Agere of its intent to enter into the WLAN market and seeking a license to, at least, the asserted '958 Patent).

**CERTIFICATE OF SERVICE**

I, Pamela Freitik, hereby certify that a copy of the foregoing **COMPLAINANTS LSI CORPORATION AND AGERE SYSTEMS LLC’S BRIEF IN RESPONSE TO NOTICE OF COMMISSION DETERMINATION TO REVIEW FINAL INITIAL DETERMINATION FINDING A VIOLATION OF SECTION 337 IN ITS ENTIRETY** was served by e-mail, or as otherwise indicated, to the parties listed below, this 1st day of November, 2013:

<p>Lisa R. Barton Acting Secretary U.S. International Trade Commission 500 E Street, SW, Room 112A Washington, DC 20436</p> <p><b><u>Via EDIS</u></b></p>	<p>Cathy Chen Attorney-Advisor Office of the General Counsel U.S. International Trade Commission 500 E Street SW Washington, DC 20436 Email: <a href="mailto:cathy.chen@usitc.gov">cathy.chen@usitc.gov</a></p> <p><b><u>Via E-Mail</u></b></p>
<p>The Honorable David P. Shaw Administrative Law Judge U.S. International Trade Commission 500 E Street, SW, Room 317-O Washington, DC 20436</p> <p><b><u>Via Overnight Mail (2 copies)</u></b></p>	<p>Patricia E. Chow Attorney-Advisor Office of the Administrative Law Judges U.S. International Trade Commission 500 E Street SW Washington, DC 20436 Email: <a href="mailto:patricia.chow@usitc.gov">patricia.chow@usitc.gov</a></p> <p><b><u>Via E-Mail</u></b></p>
<p>Paul Devinsky McDermott Will &amp; Emery LLP 500 North Capital Street, NW Washington, DC 20001 Email: <a href="mailto:FunaiLSIITC@mwe.com">FunaiLSIITC@mwe.com</a> <a href="mailto:QEFunai-837@quinnemanuel.com">QEFunai-837@quinnemanuel.com</a></p> <p><b><u>Via E-Mail</u></b></p> <p><i>Counsel for Respondents Funai Electric Company, Ltd., Funai Corporation, Inc., P&amp;F USA, Inc., and Funai Service Corporation</i></p>	<p>Elizabeth A. Niemeyer Finnegan, Henderson, Farabow, Garrett &amp; Dunner, LLP 901 New York Avenue, NW Washington, DC 20001 T: 202-408-4000 Email: <a href="mailto:Realtek-837@finnegan.com">Realtek-837@finnegan.com</a> <a href="mailto:rszz-Realtek-837@ReedSmith.com">rszz-Realtek-837@ReedSmith.com</a></p> <p><b><u>Via E-Mail</u></b></p> <p><i>Counsel for Respondent Realtek Semiconductor Corporation</i></p>

*s/ Pamela Freitik*

**CERTIFICATE OF SERVICE**

I, Stephannie Stover, hereby certify that a copy of the foregoing **PUBLIC VERSION OF COMPLAINANTS LSI CORPORATION AND AGERE SYSTEMS LLC’S BRIEF IN RESPONSE TO NOTICE OF COMMISSION DETERMINATION TO REVIEW FINAL INITIAL DETERMINATION FINDING A VIOLATION OF SECTION 337 IN ITS ENTIRETY** was served by e-mail, or as otherwise indicated, to the parties listed below, this 15<sup>th</sup> day of November, 2013:

<p>Lisa R. Barton Acting Secretary U.S. International Trade Commission 500 E Street, SW, Room 112A Washington, DC 20436</p> <p><b><u>Via EDIS</u></b></p>	<p>Cathy Chen Attorney-Advisor Office of the General Counsel U.S. International Trade Commission 500 E Street SW Washington, DC 20436 Email: <a href="mailto:cathy.chen@usitc.gov">cathy.chen@usitc.gov</a></p> <p><b><u>Via E-Mail</u></b></p>
<p>The Honorable David P. Shaw Administrative Law Judge U.S. International Trade Commission 500 E Street, SW, Room 317-O Washington, DC 20436</p> <p><b><u>Via Hand Delivery (2 copies)</u></b></p>	<p>Patricia E. Chow Attorney-Advisor Office of the Administrative Law Judges U.S. International Trade Commission 500 E Street SW Washington, DC 20436 Email: <a href="mailto:patricia.chow@usitc.gov">patricia.chow@usitc.gov</a></p> <p><b><u>Via E-Mail</u></b></p>
<p>Elizabeth A. Niemeyer Finnegan, Henderson, Farabow, Garrett &amp; Dunner, LLP 901 New York Avenue, NW Washington, DC 20001 Email: <a href="mailto:Realtek-837@finnegan.com">Realtek-837@finnegan.com</a> <a href="mailto:rszz-Realtek-837@ReedSmith.com">rszz-Realtek-837@ReedSmith.com</a></p> <p><b><u>Via E-Mail</u></b></p> <p><i>Counsel for Respondent Realtek Semiconductor Corporation</i></p>	<p>Paul Devinsky McDermott Will &amp; Emery LLP 500 North Capital Street, NW Washington, DC 20001 Email: <a href="mailto:FunaiLSITC@mwe.com">FunaiLSITC@mwe.com</a> <a href="mailto:QEFunai-837@quinnemanuel.com">QEFunai-837@quinnemanuel.com</a></p> <p><b><u>Via E-Mail</u></b></p> <p><i>Counsel for Respondents Funai Electric Company, Ltd., Funai Corporation, Inc., P&amp;F USA, Inc., and Funai Service Corporation</i></p>

s/ Stephannie Stover  
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