

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

MAXELL, LTD.,
Patent Owner

Case: IPR2020-00200

U.S. Patent No. 10,084,991

**PATENT OWNER'S RESPONSE
TO PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 10,084,991**

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Patent Trial and Appeal Board
U.S. Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

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Case IPR2020-00200
Patent No. 10,084,991
Patent Owner's Response

PATENT UPDATED OWNER'S EXHIBIT LIST

Description	Exhibit #
October 9, 2018 Notice Letter from Maxell to Apple	2001
March 16, 2020 Scheduling Order	2002
May 31, 2019 Scheduling Order	2003
Docket From District Court Action	2004
January 8, 2020 Minute Order	2005
March 18, 2020 Markman Order	2006
August 28, 2019 Minute Order	2007
September 17, 2019 Minute Order	2008
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Apple's Invalidity Contentions	2012
Asmussen Chart from District Court Action	2013
March 6, 2017 Scheduling Order from Maxell v. ZTE	2014
March 19, 2018 Scheduling Order from Maxell v. ZTE	2015
Docket from District Court Action	2016
Standing Order re COVID-19	2017
April 20, 2020 Scheduling Order from District Court Action	2018
Declaration of Tiffany A. Miller	2019
Transcript of September 28, 2020 Deposition of Dr. Lippman	2020
Declaration of Dr. Maja Bystrom	2021
U.S. Patent No. 7,864,051	2022

I. INTRODUCTION

Patent Owner Maxell, Ltd. (“Patent Owner” or “Maxell”) respectfully requests that the Board confirm the patentability of claims 1-5 and 8-12 (the “challenged claims”) of U.S. Patent No. 10,084,991. Petitioner Apple has failed to demonstrate that the challenged claims are obvious in view of the asserted prior art or that there is motivation to combine the cited prior art.

First, Petitioner and Dr. Lippman fail to show that a POSITA would be motivated to combine *Asmussen* with *Bear*. For example, Petitioner fails to consider the different design requirements of each reference and instead only provides a general motivation to combine. Specifically, Petitioner fails to consider that *Asmussen* discloses “a set top converter box or terminal for a television program delivery system” that focuses on “provid[ing] both a menu generation capability as well as a number of advanced features and functional capabilities.” Ex. 1004, 3:21-30, 6:32-35, 6:50-53, 6:57-65. *Bear*, on the other hand, discloses “[a] system and method for improved video capture on a personal computer” (Ex.1005, Abstract) and is focused on safeguarding a camera lens from damage and safeguarding the user from “inadvertent video recording.” Ex. 1005, at 7:61-62. Furthermore, Petitioner and Dr. Lippman fail to show that a POSITA would be motivated to combine *Asmussen* and *Bear* with *Marley*, *Lindstrom*, or *DeFazio*.

Second, even if *Asmussen* and *Bear* could be combined, the Petition fails to show that those references in combination with *Marley*, *DeFazio*, or *Lindstrom* render Claims 1-5 and 8-12 unpatentable. Specifically, Petitioner fails to show that *Asmussen* renders obvious the “network interface” of claim 1(a) or “renders the camera operative” in claim 1(e). Petitioner also fails to show that claim 1(e) is disclosed in *Bear*.

Accordingly, the Board should confirm the patentability of the challenged claims of the '991 Patent.

II. SCOPE OF THE PROCEEDING

A. The Challenged '991 Patent (Ex. 1001)

The '991 Patent is directed to an apparatus that allows a user to seamlessly and automatically switch between watching content and participating in a video call in a single device. *See, e.g.*, Ex. 1001, at 2:32-48. At the time of the '991 Patent, conventional systems included separate equipment for watching programming content and making video calls. *Id.* at 2:6-31. For example, if a user was watching television when a video call came in, the user would need to manually stop the programming in order to begin the video call. *Id.* When the call ended, the user would then need to manually resume watching the content. *Id.*

The inventors of the '991 Patent overcame this problem by providing an integrated system that allows the user to switch between watching content and participating in a video call, without having to perform manual operations. *Id.* at 2:32-55. For example, the inventors developed an apparatus for automatically pausing programming content to allow the user to answer a video call and, after ending the call, to automatically resume the content. *Id.* at 6:25-29.

B. The Cited References

Petitioner relies on various combinations of the prior art references *Asmussen*, *Bear*, *Marley*, *Lindstrom*, and *DeFrazio* to support its contentions of obviousness. These references are described briefly.

1. *Asmussen* (Ex. 1004)

Asmussen discloses “a set top converter box or terminal for a television program delivery system” that “provides both a menu generation capability as well as a number of advanced features and functional capabilities.” Ex. 1004, 3:21-30. The set top terminal is “achieved through a set of hardware upgrades” which “[provide] additional advanced features and functional capabilities.” *Id.* at 3:31-41. These advanced features and capabilities include: a picture-on-picture capability; a TV guide service; the capability of querying viewers; allowing subscribers to view promotional menus; enabling on-line question and answer sessions; providing

digital audio via a digital tuner; providing control of video tape machines; supporting high definition television and backyard satellite systems; sending and receiving video calls; automatically pausing a video program on detection of a video call event or triggering event; caller identification of video calls; and, dual display of video programs and calls. *Id.* at 3:42-4:30.

The objects of the invention are directed primarily toward menus and interfaces allowing users to efficiently access television programs and program options. *Id.* at 4:31-54; Ex. 2021, at ¶59.

2. Bear (Ex. 1005)

Bear discloses “[a] system and method for improved video capture on personal computer.” Ex. 1005, Abstract. More specifically, it “provides a system and method for capturing and otherwise working with video on a personal computer.” *Id.* at 2:14-16.

Unlike *Asmussen*, *Bear* is directed to a system on a personal computer. Figure 2 of *Bear* is a “general representation of a computer system arranged with integrated communications-related devices including a camera and video controls, in accordance with an aspect of the present invention.” *Id.* at 3:20-23. The camera may include components such as a lens cover, actuator, camera indicator light and a video capture button. *Id.* at 7:35-38, Figure 3.

Bear primarily describes a system with video controls to allow the user to capture a video stream or still images. Ex. 2021, at ¶74. Unlike *Asmussen*, the system in *Bear* is focused on safeguarding a camera lens from damage and safeguarding the user from “inadvertent video recording” while keeping the lens cover closed when not in use in order to provide “visual reassurance to the user that the user is not being viewed or recorded.” *Id.* at 7:61-65; Ex. 2021, at ¶74. The camera can include an indicator light to make the state of the camera apparent to the user. *Id.* at 2:43-46, 7:46-49.

Because *Bear* is focused on protecting the camera lens, the user must manually open the lens cover or press a button (e.g., a capture button) to “[prepare] the camera for capture” (*id.* at 10:38-40, 2:28-30, 8:18-19) or potentially to “trigger an image or video stream capture.” *Id.* at 7:38-45. On an incoming video call, the user may answer the call by pressing the camera button or set a system preference to automatically enable the camera on call answer. *Id.* at 2:59-3:1, 6:41-46, 12:12-20.

For the case of a video call, the user may again use the controls to “hang up by pressing the camera button which will terminate the call and turn off the camera indicator light.” *Id.* at 3:5-7.

3. *Marley* (Ex. 1006)

Marley is generally directed to a set top box that integrates videophone call functions, that is, “initiating, receiving, and store video telephony calls.” Ex. 1006, Abstract, [0015]-[0016].

Marley discloses two processors, a primary audio/video processor (PAVP) and a video telephone processor (VTP). *Id.* at [0015]. The VTP is responsible for video processing “specifically directed to controlling and managing video telephone functions” while the PVAP “performs the types of audio and video processing typically associated with DVR-capable set-top appliances, including: routing incoming signals to/from a Multiple System Operator (‘MSO’).” *Id.* at [0015].

When a caller makes a call, the PVAP handles the outgoing call and pauses the video being viewed by the caller while the VTP activates the caller’s camera and microphone and handles video call encoding. *Id.* at Figure 4, [0018]-[0019].

However, *Marley* only discloses pausing the callee’s video content and activating the callee’s camera after the call is accepted, not upon receiving an inbound call:

Acceptance of the call causes PAVP **308** to mute and/or pause any programming presently being viewed on monitor **320 (503)**, and store the paused programming in DVR memory **316** for viewing after the

termination of the video call (505). VTP 302 activates camera 104 and microphone 106, and in conjunction with PAVP 308 transmits the video image and audio from camera 304 and microphone 306 for reception by set-top box 100 (507), and provides a real time “self-image” of camera 304’s output on a portion of monitor 320 for viewing by the called party (509).

Id. at Figure 5, [0022]; Ex. 2021, at ¶80

Thus, although *Marley* may generally disclose a resumption of viewing of programming presenting being viewed on a monitor after the video call is terminated, *Marley* does not disclose that the processor paused the programming and rendered the camera operative when receiving an inbound videophone call. Ex. 2021, at ¶81.

4. *Lindstrom* (Ex. 1008)

Lindstrom discloses “a receiver having an in-band tuner and an out-of-band tuner integrated on a single IC.” Ex. 1008, Figure 1, [0005]. The features disclosed include controlling the power of and the signal strength to the out-of-band tuner (Ex. 1008, Abstract) where the in-band tuner receives cable television channels and the out-of-band tuner receives content such as video-on-demand, pay-per-view channels and videophone signals. *Id.* at [0003], [0016]-[0017]; Ex. 2021, at ¶83. *Lindstrom* addresses the challenge of cost-effectively supporting receipt and display of a wide variety of broadband content noting that “[modern] subscriber

home terminals employ separate out-of-band and in-band tuners.” *Id.* at [0003]-[0004].

5. *DeFazio* (Ex. 1007)

DeFazio is generally directed toward database management for caller ID provisioning. Ex. 1007, Abstract. More specifically, *DeFazio* discloses populating and de-populating a caller ID database so that the caller name can be displayed. *Id.* at 2:47-50, 3:42-45; Ex. 2021, at ¶¶84-85.

C. The Instituted Grounds and Claim Construction

The Board instituted review on six grounds that are all based on a combination of *Asmussen* with *Bear*:

Ground	Claims Challenged	35 U.S.C. §	References
1	1, 8	103(a)	Asmussen, Bear
2	1-5, 8-12	103(a)	Asmussen, Bear, Marley
3	5, 12	103(a)	Asmussen., Bear, Marley, DeFazio
4	1, 8	103(a)	Asmussen, Bear, Lindstrom
5	1-5, 8-12	103(a)	Asmussen, Bear, Lindstrom, Marley
6	5, 12	103(a)	Asmussen, Bear, Lindstrom, Marley, DeFazio

As a part of its Institution Decision, the Board determined that no claim term requires express construction. Institution Decision, at 33.

III. EACH OF THE INSTITUTED GROUNDS OF INVALIDITY FAIL

Petitioner failed to establish that the challenged claims are obvious under Grounds 1-6. First, Petitioner failed to establish that claims 1 and 8 are obvious over *Asmussen* in view of *Bear*. As discussed below, Petitioner has not shown that *Asmussen* or *Asmussen* in view of *Bear* disclose elements 1(a), 1(e) or 8(c). Second, Petitioner has not shown that it would have been obvious to combine *Asmussen* and *Bear*. Finally, Petitioner has not shown that it would have been obvious to combine *Asmussen* and *Bear* with *Marley*, *Lindstrom* or *DeFazio*. For all of these reasons, Petitioner has not shown that the challenged claims are obvious based on Grounds 1-6.

A. Ground 1: Petitioner Failed to Establish that Claims 1 and 8 Are Obvious Over *Asmussen* In View of *Bear*

Petitioner fails to show why *Asmussen* in view of *Bear* renders obvious Claims 1 and 8 of the '991 Patent.

1. Element 1(a)

The combination of *Asmussen* and *Bear* does not disclose the claimed “network interface.” Petitioner does not provide any citation to *Bear* for support; thus, the only question is whether *Asmussen*’s “tuner 603 in combination with a receiver 750” discloses the “network interface” limitation. It does not.

Asmussen describes certain hardware upgrades to enhance a set top terminal's functionality. These upgrades are expressed in Figs. 12a and 12b as Level A, B, C, and D hardware upgrades, and include the use of an expansion card slot. *See* Ex. 1004, 26:43-29:47. Nowhere in this detailed disclosure of the hardware upgrades does *Asmussen* disclose or contemplate including receiver 750 as part of receiver components 601, nor does this disclosure explain that any of the hardware upgrades (*i.e.*, Levels A, B, C, D, or E) pertain to the reception/transmission of video calls. Ex. 2021, at ¶¶91, 97.

Petitioner relies on two separate embodiments, neither of which disclose the “network interface” as claimed. *See* Petition, at 21-24.

First, in the embodiment shown in Figure 11, *Asmussen* provides significant discussion of the tuner 603, which is primarily used to change cable signals intended for reception on the subscriber's TV, *e.g.*, the user instructing the tuner to tune to the proper frequency of the channel or desired program. *See* Ex. 1004, 26:1-29; Fig. 11. And, while there are upgrades to the set top terminal where a tuner can receive cable television input signals (CATV), there is no explicit disclosure that the combination of the tuner 603 and receiver 750 satisfy the claimed network interface receiving first and second digital information. *See* Petition at 21-23. In fact, *Asmussen* mentions receiver 750, the receiver with

respect to video conferencing, only once in the entirety of the patent and this is not in the context of use with tuner 603 or included as part of the receiver components 601. *Compare* Ex. 1003, 50:44-49 *with id.* at 26:1-63, 28:7-16; Ex. 2021, at ¶92.

There are several reasons why the tuner 603 and receiver 750 cannot meet the network interface limitation of the claims. As Patent Owner's expert explains, in the '991 Patent, the network interface ("network I/F") serves as both a receiver and sender of information, *e.g.*, "a request signal is transmitted from the processor **12** to the VOD server **21** through the network I/F **15** and network **6**" and "[t]he title data is passed to the HTML browser **13** through the network I/F **15**." Ex. 1001, 12:55-57, 12:59-60, 11:67-12:5, Figure 2; Ex. 2021, at ¶93. However, as shown in the *Asmussen* Figures 4, 11, and 12a, which Dr. Lippman cites, the tuner 603 serves only as a receiver of CATV input, while correspondingly, in Figure 30 the receiver 750 is only shown by the arrow to receive an input. Ex. 2021, at ¶94. Further, Dr. Bystrom explains that an optional modem would be required for communication to the cable headend, that is, sending of information or a "data transmitter **344** provides upstream data communications." *See, e.g.*, Ex. 1004, 15:20-23, 25:57-60; Ex. 2021, at ¶94. Indeed, Dr. Lippman recognizes this deficiency when he notes that "*Asmussen* teaches that the 'transmitter 730' is used for transmitting the upstream transmission of a video call (*e.g.*, the audio/video

signal(s) from the camera/microphone) 'into a video conferencing connection network,'" but he does not include transmitter 730 as part of the network interface element for claim element 1(a). Ex. 1003, ¶115; Ex. 2021, at ¶94.

In addition, Dr. Lippman incorrectly attempts to combine receiver 750 with the receiver components block 601 by pointing to *Asmussen's* Figure 12a. Ex. 1003, ¶116. Figure 12a illustrates the set top terminal with the additional level A-C hardware upgrades. Ex. 1004, Figure 12a. As Dr. Bystrom explains, video call functionality is provided by the Turbo Card shown in Figure 6: "Optionally, the Turbo Card **700** provides functionality to perform video calls using the set top terminal **220**." Ex. 1004, 17:25-26; Ex. 2021, at ¶96. Dr. Lippman has not shown that the Turbo Card is one of the aforementioned hardware upgrades A-C, and, thus, incorrectly states that receiver 750 is part of Figure 12a. Ex. 2021, at ¶96.

Second, Dr. Lippman points to receiver components block 601 of Fig. 12a. But Dr. Bystrom explains that receiver components block 601 are associated in *Asmussen* with "various receiver components described above" in column 26, that is, well before the description of receiver 750 in column 50. *Id.*, 26:57-60, 50:44-45; Ex. 2021, at ¶97. In fact, receiver components block 601 refers to such components as a demodulator and demuxer. Ex. 2021, at ¶97

Further, claim element [1.a] recites “a network interface configured to receive first digital information which is received from a contents server which is coupled to the communication apparatus via the network interface.” This claim element requires that the contents server be coupled to the communications apparatus via the network interface. As shown in the ‘991 Patent, a video on demand server (“VOD server”) is the “contents server” required by claim element [1.a]. Ex. 1001, Figure 3, 11:67-12:5, 12:39-44. There is no evidence that *Asmussen*’s tuner 603 and receiver 750 are coupled to a contents server, particularly one that receives video-on-demand. Ex. 2021, at ¶99. As shown in Figure 1 of *Asmussen*, the operations center 202 is coupled to cable headend 208 via a terrestrial link and there is no explanation that operations center 202 includes a contents server that is coupled to a communication apparatus (*i.e.*, set top terminals 220) and that the tuner 603 and receiver 750 of set top terminal 200 receives first digital information from a contents server in operations center 202. Ex. 2021, at ¶100. Further, the terrestrial link between cable headend 200 and operations center 202 shows a one-directional communication going in the uplink direction, not that operations center 202 is providing first digital information from a contents server to set top terminals 220. *Id.*

Finally, the very nature of the disclosure in *Asmussen* undermines Petitioner's argument with respect to the claimed network interface. *Asmussen* already accounts for hardware upgrades in its system which, as described above, do not include imposition of the receiver 750 into its upgrades with respect to Figs. 12a and 12b. As such, a POSITA would not shoehorn a "collective tuner 603 and receiver 750" into the system of *Asmussen* to attempt to arrive at the claimed network interface where *Asmussen* already contemplates extensive upgrades to its system, particularly where *Asmussen*'s objects of the invention are directed primarily toward menus and interfaces allowing users to efficiently access television programs and program options. *Id.* at 4:31-54; Ex. 2021, at ¶101.

Accordingly, *Asmussen* does not teach the claimed "network interface" of Claim 1(a).

2. Element 1(e)

Element 1(e) recites "wherein when the processor receives an inbound videophone call notice while displaying the first digital information on the display, the processor pauses the displaying of the first digital information and renders the camera operative." Thus, it is not simply that a camera is rendered operative; rather, the camera is rendered operative by the processor *upon receipt of* an

inbound videophone call notice, while displaying the first digital information, and then pausing that first digital information. Ex. 2021, at ¶118.

Petitioner's evidence merely stands for the unremarkable proposition that a processor within the *Asmussen* system generally interacts with the camera. However, the camera in Claim 1(e) of the '991 Patent is rendered operative **when** a videophone call is received, *i.e.*, a causation result that occurs without user involvement. Ex. 2021, at ¶119.

Petitioner's expert focuses on *Asmussen*, 21:34-42 and opines that "a user may configure how the system operates when a video call occurs, because all the available configurations in the call options menu are used to 'support video calling.'" Ex. 1003, ¶128. However, Petitioner's expert incorrectly attempts to draw a parallel between the "automatic pause program feature" in *Asmussen* (e.g., Ex. 1004, 43:18-48:28) and the processor rendering the camera operative upon receipt of an incoming video call as required by element [1.e] in the '991 Patent. Ex. 2021, at ¶105. By doing so, Petitioner's expert creates a matrix of four alleged scenarios (automatic pausing on/off and default camera state being on/off). *Id.*

Asmussen does distinguish between pausing the video program in response to a "communications event" (*i.e.*, automatically pausing the video) and a "triggering event" (*i.e.*, pausing the video only upon user input). *Id.* ¶106. Further,

Asmussen notes that an incoming video call could be a communications event that could automatically pause the video program. Ex. 1004, 44:9-13. However, *Asmussen* does not disclose that the automatic pausing feature's treatment of incoming video calls—discussed in detail over numerous columns (*e.g.*, Ex. 1004, 43:18-48:28)—can simply be applied to the operation of the camera. Ex. 2021, at ¶107. Rather, Dr. Lippman's opinions as to a POSITA's various "understandings" of *Asmussen* on this false equivalence is nothing of the sort—they are unsupported statements that attempt to inject subject matter that is not in *Asmussen*.

Nowhere in the "Basic Video Call Functionality" section (Ex. 1004, 49:43-51:8), which refers to Figure 30 and provides functionality information, does *Asmussen* state that the camera 2000 is rendered operative upon receipt of an incoming video call. Ex. 2021, at ¶108.

Dr. Lippman relies on *Asmussen* at 21:34-42 and opines that:

In my opinion, the "on" state of the camera occurs in response to an inbound video call because *Asmussen* teaches setting the default state "to support video calling." *Asmussen*, 21:34. Additionally, rendering the camera operative *when the processor receives* an inbound videophone call notice would be the most logical and straightforward design. As I noted above, no reasonable skilled person would design a video calling system to always leave the camera on (regardless of whether an incoming call is detected or is active). A camera that is

always “on” has the potential to violate the user’s privacy and also would unnecessarily waste power and computational resources.

Ex. 1003, at ¶128.

However, Dr. Bystrom explains that leaving a camera “on” at all times would not necessarily waste the same resources in the apparatus described in *Asmussen*, which includes a television and set top box. Ex. 2021, at ¶109. This is because a television and set top box derive power from an AC outlet versus, for example, draining a mobile phone battery. *Id.* Furthermore, there is no indication that leaving a camera “on” would also require that images/video be broadcast. *Id.* Incredibly, Dr. Lippman stated during his deposition that he did not understand what a wake up function is. Ex. 2020, 60:15-61:22. However, this is contradicted by Dr. Lippman’s own patent U.S. 7,864,051, titled “Quasi-passive wakeup function to reduce power consumption of electronic devices,” which proposes a technique for leaving electronic devices on, albeit in a low-power state, until needed. Ex. 2022.

A POSITA would certainly have understood that a camera could remain on and minimal operations, such as simply storing a few frames, could be performed. Ex. 2021, at ¶109. Indeed, this would simultaneously preserve a user’s privacy, since no video would be broadcast, and require minimal resources, since no extensive compression or other processing would be required. *Id.* *Asmussen* itself

provides support that the camera is not rendered operative until the user accepts the video call in order to safeguard the user's privacy. Ex. 2021, at ¶110.

First, *Asmussen* discloses that “the video conferencing system can support more sophisticated remote participant controls of video and camera functions. For example, the camera 2000 may be electronically controllable (*e.g.*, electronically steerable, focusing, zoom, pan, etc.) locally or remotely, and one or more other participating viewers 266 can command these electronically controllable aspects of the camera 2000 to customize and dynamically alter the characteristics of the video image sensed by the camera 2000.” Ex. 1004, at 56:32-40. Although this passage does not explicitly say when such control by remote parties could occur, a POSITA would understand such control to occur only after the video call was accepted/established. Ex. 2021, at ¶111. Otherwise, a remote party could substantially invade a user's privacy by simply initiating a video call to gain control of the user's camera 2000. *Id.*

Second, nowhere in *Asmussen* is there any figure or image showing that a camera is rendered operative upon receipt of an incoming video call. *Id.*, at ¶112. For example, there is no disclosure that, upon receipt of an incoming video call, the camera is rendered operative and the user's face is visible in a small box on the display prior to answering the video call. *Id.* Rather, *Asmussen* states that “the

caller identification techniques described in section C(4)(g), above, are applicable” to video calls. *See* Ex. 1004, 59:24-26. Section C(4)(g) refers to a discussion of “Caller ID” (under the sub-section “Advanced Features and Functional Capabilities”) for incoming telephone calls. For example, *Asmussen* states:

Upon receiving the telephone number from which the call was initiated, the preferred embodiment of the caller ID compares the telephone number with a list of telephone numbers stored in memory. The list of telephone numbers stored in memory is cross referenced to a list of names, other textual data or graphics. When the set top terminal finds a match between the telephone number and a number stored in memory, the corresponding text or graphics are displayed on the television screen. For example, “GRANDMA” and a “smiley face” graphic can be flashed across the television screen using an overlay menu.

Ex. 1004, at 39:18-28. This example is shown in Figure 24(a):



Ex. 1004, Fig. 24(a); *see also id.* at 43:43-50 (“As shown in FIG. 24a, a video display **1400** displays a video program **1401**. Based upon detection of a telephone

call, the system displays a message **1402**, which may include the incoming telephone number as well as any text or graphics the user has previously associated with that number. For example, as shown, a user may associate a name with a particular number and potentially also associate an icon with it such as a 'smiley face.'”).

Therefore, *Asmussen* states that the disclosure relating to caller id for telephone calls is applicable to video calls. Ex. 2021, at ¶114. Thus, a POSITA would understand that a user would see a similar “Grandma” prompt as in Figure 24a when an incoming video call from Grandma similarly occurs. *Id.* This is confirmed by Fig. 28 of *Asmussen*:

If another type of communications event occurred (step 1451), such as receipt of an incoming video call, the system may display an indication of that type of communications event (step 1456). For any of the communications events, the system may alternatively display an icon, such as a telephone icon for a phone call or an envelope icon for an e-mail message, or display textual or other information providing an indication of the communications event. This display may be in the form of an overlay menu or a hidden menu. Alternatively, techniques such as picture-in-picture, split screen, or side-by-side screen displays may be used. After displaying an indication of the communications event, the system waits for user input (step 1457).

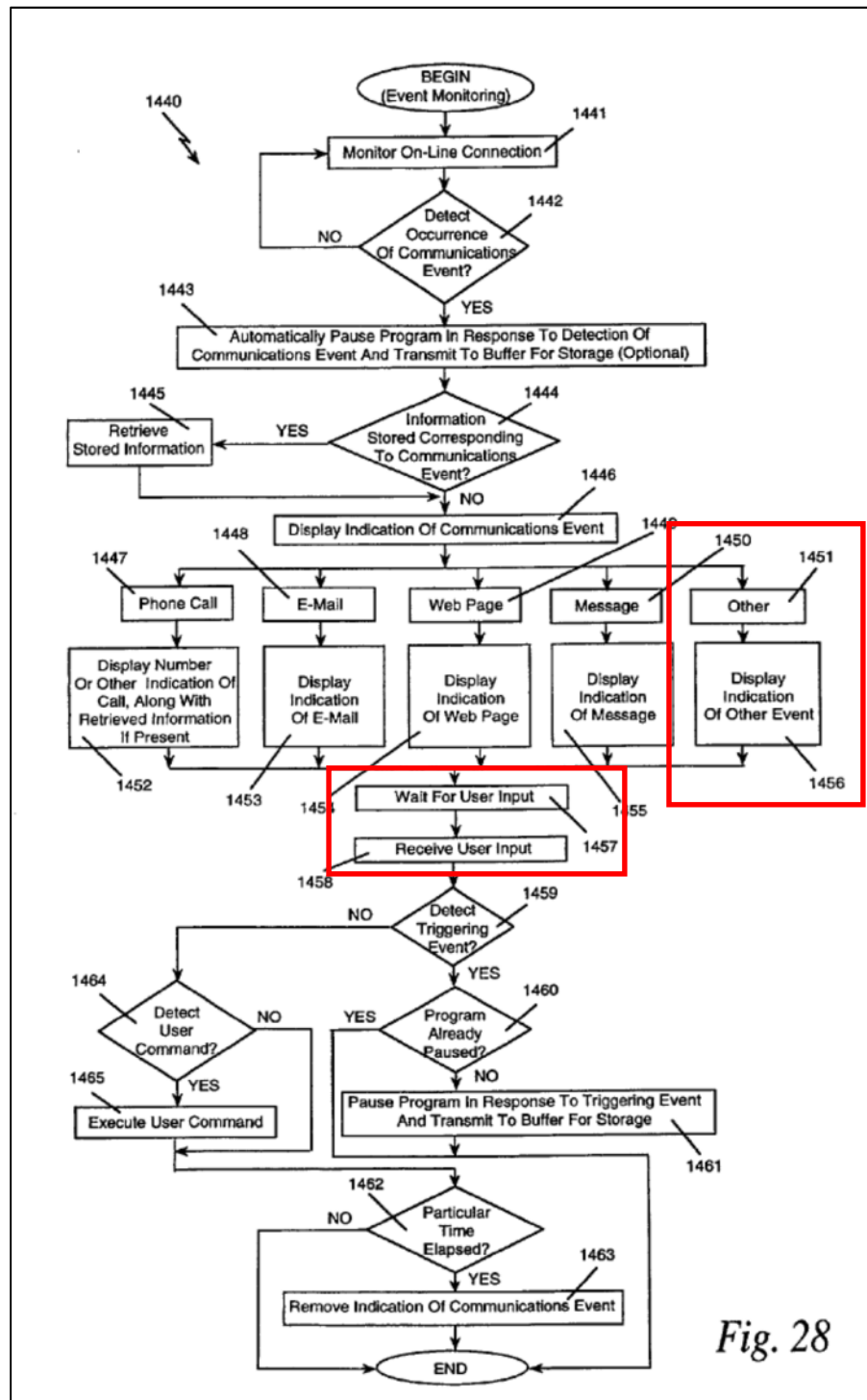


Fig. 28

Ex. 1004, at 47:26-38, Fig. 28 (annotated).

Nowhere in the discussion of the display of another type of communication event, such as an incoming video call, does *Asmussen* disclose that the camera is rendered operative upon receipt of the video call. Ex. 2021, at ¶116.

At most, *Asmussen* relates generally to receiving video calls, pausing the video program upon receipt of the video call, caller id of video calls, or the microprocessor executing programs. *See* Ex. 1004, Abstract, 4:5-30, 15:15-33, 31:39-48, 43:18-44:37, 46:27-48:28, 50:11-17, 59:37-41; Ex. 2021, at ¶117. It is not enough that a camera is rendered operative at some point during the video call. Rather, the camera must be rendered operative by the processor ***upon receipt of an inbound videophone call notice***, while displaying the first digital information, and then pausing that first digital information.

Petitioner's expert admits that *Asmussen* discloses detecting an inbound videophone call, pausing the video program, and "then waits for user input, and once the user input is received, determines if the user input is a 'triggering event.'" Ex. 1003, ¶155. In other words, the processor does not cause the camera to be rendered operative after receiving a videophone call as Claim 1(e) requires. At most, the processor pauses the program and waits for further instruction ***from the user***. Ex. 2021, at ¶119. The claim requires that the camera is rendered operative upon receipt of the video call, not when the call is answered.

Asmussen further discloses that “[t]o support video calling with outgoing video, the remote control unit **900** preferably includes a camera activation button (not shown) and buttons or other controls for pointing the camera **2000**. The cursor movement buttons **370**, a joystick, a trackball or something similar can be used for camera pointing in a camera control mode.” Ex. 1004, at 31:43-48. Although this passage discusses outgoing video calls, the passage further underscores the user’s ability to control and render the camera operative—not the processor on receipt of a video call as required by Claim 1(e)—consistent with the remainder of the *Asmussen* disclosure. Ex. 2021, at ¶120.

Notably, the instructions “allow a user to access various menus by making selections on the remote control 900” and an example of a menu is the “video call operations menu 1022” that Petitioner relies on with respect to the default state (on/off) of the video camera. *See* Ex. 1004, at 21:34-42. Thus, even if the user chooses the default camera setting to “on” via a remote control prior to receiving an inbound video call (as Petitioner’s expert concedes, Ex. 1003, ¶131), there is nothing in *Asmussen* that discloses that that the camera is rendered operative by the processor *when* the inbound video call is received. Ex. 2021, at ¶121.

In addition, *Bear* does not disclose claim 1(e). First, *Bear* discloses “[a] system and method for improved video capture on personal computer.” Ex. 1005, Abstract. In fact, the Summary of the Invention states that “the present invention provides a system and method for capturing and otherwise working with video on a personal computer.” *Id.* at 2:14-16. Figure 2, reproduced below, is a “general representation of a computer system arranged with integrated communications-related devices including a camera and video controls, in accordance with an aspect of the present invention” (*id.* at 3:20-23):

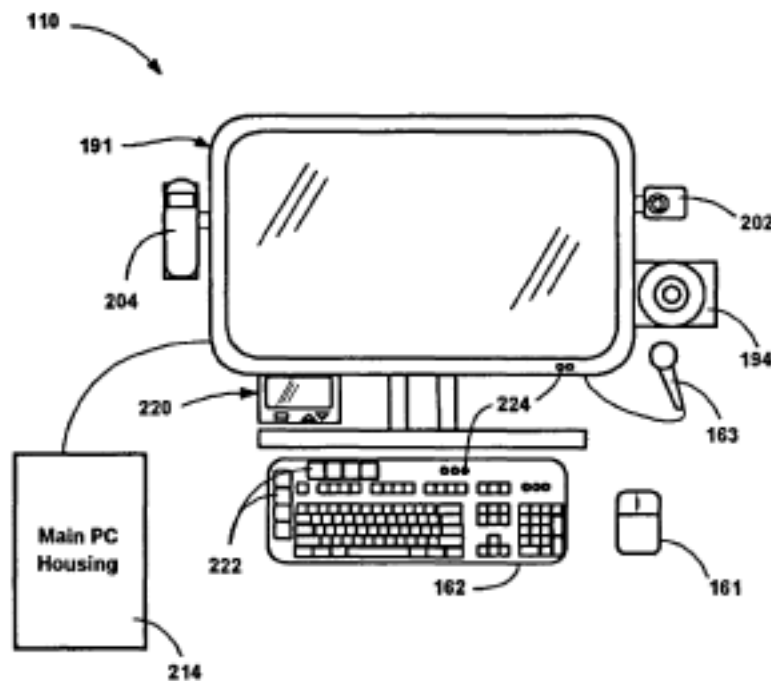


FIG. 2

Bear primarily describes a system where the user must manually open the lens cover 310 or press a button (e.g., video capture button 308) to provide an instruction to initiate the A/V capture application program to capture a video or still image, requiring this step to actuate the lens cover 310 to “safeguard against inadvertent video recording or damage to the lens 314” as shown in Figure 3, reproduced below:

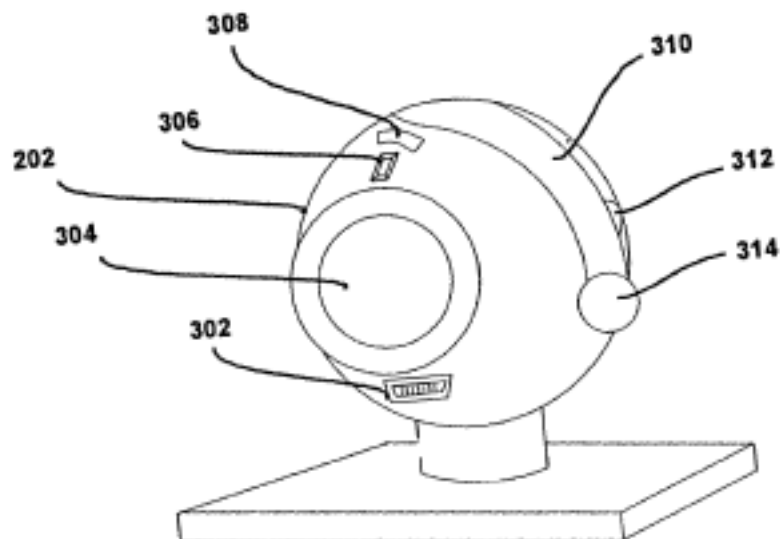


FIG. 3

Bear mentions that “the computer system may launch the [A/V] application in response to receiving an incoming phone call that supports video.” *Id.* at 11:41-43. However, contrary to Petitioner’s claim, *Bear* does not teach the “processor” of Claim 1(e). *Petition*, at 37; *Ex. 2021*, at ¶¶123-124.

Notably, Dr. Lippman neglects the statement “[w]hile an audio/video (A/V) capture application is executing, pressing the capture button 308 usually triggers an image or video stream capture depending on the mode setting” which indicates that a user should still manually press a button even if application software has been triggered by an incoming call. Ex. 1005, at 7:42-45. *Bear* instructs that “[i]f the user has pressed the capture button **308** or otherwise has made an indication to stop, the application then displays a dialog box for the user to confirm that the image is to be saved at step **1018**.” Ex. 1005, at 12:2-6. Dr. Bystrom explains that this addition of the question of whether to save the captured video indicates that this A/V application is for the purposes of recording a video call. Ex. 2021, at ¶126. If combined with *Asmussen*, the A/V application of *Bear* that automatically records each videophone call and then gives the user the option of saving the recording would add a layer of unneeded processing and complexity to each video call, which is counter to the teaching of the ‘991 patent. *Id.*

Thus, nowhere does *Bear* explain or disclose that the camera is rendered operative when the processor in *Bear* receives an inbound videophone call notice while displaying the first digital information as required in Claim 1(e). Nor does *Bear* explicitly disclose that the processor pauses the displaying of the first digital information **and** renders the camera operative as required in Claim 1(e).

Thus, Petitioner has not shown that Claim 1(e) is obvious over either *Asmussen* alone or *Asmussen* in view of *Bear*.

3. Element 8(c)

For the same reasons that Petitioner and Dr. Lippman failed to show the disclosure of Claim 1(e) in *Asmussen* and *Bear* discussed above, Petitioner and Dr. Lippman have equally failed to show the disclosure in claim 8(c).

4. Lack of Motivation to Combine

Even if Petitioner did show that *Asmussen* or *Asmussen* in view of *Bear* disclosed the elements discussed above (they have not), Petitioner still fails to show why and how a POSITA would combine *Asmussen* with *Bear*. Specifically, Petitioner fails to explain why a POSITA would be motivated to rely on *Bear* to include automatically launching an A/V capture application to begin capture of a video stream in *Asmussen*. Ex. 2021, at ¶130.

As discussed below, the design requirements for *Asmussen* and *Bear* are substantially different. Ex. 2021, at ¶131. In addition, a POSITA would not be motivated to combine the teachings of *Asmussen* and *Bear* because they are directed to solving different problems and use different structures to solve these problems. *Id.* Petitioner has not considered the two references as a whole and has not accounted for these differences. Instead, Petitioner selected portions of each

reference and used hindsight to assemble a new system without accounting for the different objectives and goals of the systems in *Asmussen* and *Bear*.

“To establish that a particular combination of references would have been obvious, Petitioner must explain both *how* and *why* one of ordinary skill in the art would have combined the references to produce the claimed invention.” *Guangdong Alison Hi-Tech Co., Ltd. v. Aspen Aerogels, Inc.*, IPR2017-00152, Paper 8 at 16 (P.T.A.B. Mar. 23, 2017) (citing *Trivascular, Inc. v. Samuels*, 812 F.3d 1056, 1066 (Fed. Cir. 2016) (emphasis in original). Here no such “how” and “why” have been provided by Petitioner.

A POSITA would not be motivated to modify *Asmussen*, a set top box system, to include an A/V capture application designed for use in a personal computer as described in *Bear*. Ex. 2021, at ¶132. While *Bear* states that its “invention is operational with numerous other general purpose or special computing system environments,” *Bear* also merely states that it “**may be** suitable for use with . . . set top boxes” without providing any further detail. *See* Ex. 1005, at 3:66-4:9.

Petitioner also does not explain how a POSITA would implement the personal computer-based application of *Bear* in a set top box system like *Asmussen*. Ex. 2021, at ¶133. Petitioner describes some benefits in generalities

("improve the functionality" and "simplified"), and claims that "the modification requires only simple programming techniques," citing to its expert's declaration. *See* Petition, at 39. But describing potential improvements that are accomplished by the claims of the '991 Patent is the definition of hindsight. Neither Petitioner nor its expert attempts to quantify such "simple programming techniques." Incorporating an entirely different function into a processor is hardly the result of "simple programming techniques."

Finally, *Bear* was not solving the same problem as *Asmussen*. Ex. 2021, at ¶134. As discussed above, *Asmussen*'s focus is providing user control (i.e., waiting for user input after the digital information is paused), and *Bear* is completely silent on rendering the camera operative in the full context of Claims 1 and 8 (i.e., rendering the camera operative when a processor receives an inbound videophone call notice while displaying the first digital information on the display and pauses the first digital information). Petitioner improperly focuses on *Bear*'s teachings in isolation.

However, even if one were to improperly combine *Asmussen* and *Bear*, the combination does not correct for the deficiencies of either in isolation. The Institution Decision states that:

As Dr. Lippman testifies, “it would have been obvious to combine the automatic launching of the A/V capture application and capturing of a video stream in response to receiving an incoming video call, as taught by Bear, in the system of Asmussen for the advantages discussed by Bear of providing a ‘simplified system and method for a user to interact with various communications and media applications in a consistent way.’” Ex. 1003, ¶ 140 (quoting Ex. 1005, 2:1–10). Dr. Lippman explains, “[t]his combination would have used Bear’s techniques of the processor enabling the camera with Asmussen’s processor, which was already capable of receiving incoming video call notifications and pausing the current video program.” Ex. 1003 ¶ 140.

Institution Decision, 71-72.

However, *Bear* is focused on the manual operation of the camera. Ex. 2021, at ¶137. That is, *Bear*’s system is focused on safeguarding a camera lens from damage and safeguarding the user from “inadvertent video recording” while keeping the lens cover closed when not in use in order to provide “visual reassurance to the user that the user is not being viewed or recorded.” Ex. 1005, 7:61-65. Specifically, *Bear* discloses that in order for the system to answer and activate the camera on an incoming video call, the user may answer the call by pressing the camera button or, alternatively, the user may set a system preference to automatically enable the camera on call answer. *Id.* at 2:59-3:1, 6:41-46, 12:12-20. Nevertheless, Dr. Lippman cites to *Bear*’s A/V capture application which can

be launched “in response to receiving an incoming phone call that supports video.” Ex. 1003, at ¶105, Ex. 1005, at 11:37-43. When in video capture mode, the A/V capture application, as disclosed in *Bear*, “begins capturing the video stream.” Ex. 1005, at 11:65-66, Figure 10. However, Dr. Lippman neglects the fact that the A/V capture application requires a step of “[displaying] a dialog box for the user to confirm that the image is to be saved at step **1018**.” Ex. 1005, at 12:2-6, Figure 10. A POSITA would understand that adding a dialog box step, that is, a mandatory question/answer process to every video call would be burdensome to a user. Ex. 2021, at ¶139.

Further, *Bear* notes manual operation in conjunction with the A/V capture application cited by Dr. Lippman and described in Figures 9 and 10: “Opening the lens cover prepares the camera for capture, and may stream preview video to the A/V capture application.” Ex. 1005, at 8:18-20; *see also id.* at 10:33-37, 10:38-40.

The Institution Decision also relies on the following:

Dr. Lippman also explains that “[m]odifying Asmussen’s system to render the camera operative in response to an inbound videophone call notice, as taught by *Bear*, would have reduced the time it would take the system to begin transmitting video out to a calling party, thereby reducing lag time between the starting of a video call and the reception of the video stream at the calling party’s set top terminal.” *Id.* ¶ 141.

Dr. Lippman testifies that “[t]his would have simplified the Asmussen system for the user and eliminate the possibility of the user forgetting to activate their camera, having to locate the remote to activate the camera, and having to learn the operations for beginning a videophone call (which is, again, in keeping with Bear’s stated desired to simplify the user’s interactions with the media system).” *Id.* Dr. Lippman explains that “[i]t would have been an easy programming step to provide an option to render the camera operative upon receipt of an inbound videophone call, as the skilled person would need only program such an option in Asmussen’s options menu 1022.” *Id.*

Institution Decision, at 72.

As explained above, neither *Bear* nor *Asmussen* teaches rendering a camera operative on receipt of an inbound video call, as required by claim element [1.e]. Rather, both *Bear* and *Asmussen* teach a user must **answer** a call. For instance, *Bear* discloses:

For example, whenever there is an incoming phone call that supports video, the camera indicator light **306** may slowly blink red to alert the user. The user may then answer the call immediately in that mode by pressing the camera button **308**. If the user presses the camera button, the system opens the video monitor, lights the camera indicator, and starts streaming video. Optionally, the user can set a preference so that the camera is automatically enabled whenever answering a call that supports video.

Ex.1005, at 12:12-20. Thus, the user in *Bear* necessarily must have the camera or other hardware at hand to answer the call and then activate the camera. Ex. 2021, at ¶142.

Similarly, *Asmussen* discloses a remote control for both call answer and camera activation. Ex. 1004, at 31:39-46.

Further, a POSITA would have understood that at the processing speeds available in hardware at the time of the invention, reduction in lag time would not be a concern as Dr. Lippman suggests. Ex. 2021, at ¶144. For all of the foregoing reasons, the Petition fails to demonstrate a POSITA would combine *Asmussen* and *Bear*.

B. Grounds 2-6: Petitioner Failed to Establish A Motivation To Combine

As stated above in Section III.A.4, Petitioner failed to establish a motivation to combine *Asmussen* with *Bear* and thus, all of Petitioner's Grounds 1-6 fail to show that the challenged claims are obvious over the prior art. Grounds 2-6 fail for the additional reason that Petitioner has not established a motivation to combine *Asmussen* and *Bear* with *Marley*, *Lindstrom*, or *DeFazio*.

1. Grounds 2, 3, 5, and 6: Petitioner Failed to Establish A Motivation To Combine *Asmussen* and *Bear* with *Marley*

Petitioner fails to show why and how a POSITA would combine *Asmussen* and *Bear* with *Marley*. Specifically, a POSITA would not be motivated to modify *Asmussen*, a set top box system, to include both an A/V capture application designed for use in a personal computer as described in *Bear* and another set top box system in *Marley*.

First, *Marley* teaches away from certain claim elements. For example, claims [1.d]-[1.g] require a single processor for processing the video content and videophone calls and *Marley* discloses two processors: a primary audio/video processor (PAVP) and a video telephone processor (VTP). Ex.1006, at [0015]; Ex. 2021, at ¶147.

Second, claim element [1.e] requires that a camera be rendered operative on receipt of an inbound videophone call notice. *Marley* instructs that the programming be paused and the camera be made active only *after* a call is accepted:

Acceptance of the call causes PAVP **308** to mute and/or pause any programming presently being viewed on monitor **320 (503)**, and store the paused programming in DVR memory **316** for viewing after the termination of the video call (**505**). VTP **302** activates camera **104** and microphone **106**, and in conjunction with PAVP **308** transmits the

video image and audio from camera **304** and microphone **306** for reception by set-top box **100 (507)**, and provides a real time “self-image” of camera **304**’s output on a portion of monitor **320** for viewing by the called party (**509**).

Ex. 1006, *at* Figure 5, [0022].

Finally, the design requirements for the combination of *Asmussen* and *Bear* (per Ground 2) are substantially different than the system in *Marley*. In addition, a POSITA would not be motivated to combine the teachings of the combination of *Asmussen* and *Bear* with *Marley* because they are directed to solving different problems and use different structures to solve these problems.

A POSITA would not be motivated to modify *Asmussen*, a set top box system, to include an A/V capture application designed for use in a personal computer as described in *Bear*. Ex. 2021, at ¶151. The systems of *Asmussen* and *Bear* are different and were solving different problems, and Petitioner provide only hindsight-based reasoning for combining the two references. Ex. 2021, at ¶151.

Petitioner never explains how a POSITA would implement another set-top box system as discussed in *Marley* to the now hybrid set-top box/personal computer combination of *Asmussen* and *Bear*. Ex. 2021, at ¶152. For each of the discussed combinations in Claims 1(c), 2, 5, and 12, Petitioner improperly focused on and explained *only* how a POSITA would modify *Asmussen alone* to be

combined with *Marley* (e.g. the modification of “*Asmussen*’s microprocessor”) and *not* how a POSITA would have modified the *combination of Asmussen and Bear* (e.g., the modification of *Asmussen/Bear* processor) as required for Ground 2. *See* Petition, at 49-56, 60-61, 65-66.

The Institution Decision states that:

We credit Dr. Lippman’s testimony, which supports Petitioner’s position. For example, with respect to claim 1, we agree that modifying *Asmussen* to use *Marley*’s teaching of incorporating all of its components into a single housing would be a relatively straightforward application of a known technique for a person of ordinary skill in the art and would provide several benefits to consumers, such as reducing the number of appliances a consumer would need to purchase in order to have videophone capabilities and provide videophone capabilities in familiar format to consumers.

Institution Decision, 89. However, *Marley* teaches away from the ’991 patent, thus, there is no motivation to combine *Asmussen* with *Marley*. Ex. 2021, at ¶154. Further, *Asmussen* is focused on providing advanced features and functional capabilities through hardware upgrades. Specifically, *Asmussen*’s set top terminal is “achieved through a set of hardware upgrades” which “[provide] additional advanced features and functional capabilities.” Ex. 1004, at 3:31-41. *Asmussen* further notes that a “hardware upgrade for adding video call functionality to a set

top terminal is also disclosed.” Ex. 1004, at Abstract. The Turbo Card “provides functionality to perform video calls using the set to terminal.” *Id.* at 17:25-26. Therefore, incorporating *Marley*’s integrated components in a single housing runs counter to *Asmussen*’s teaching of using hardware upgrades to achieve advanced features such as video calling. Ex. 2021, at ¶156.

The Institution Decision also notes:

Similarly, with respect to claim 5, we agree that it would have been relatively straightforward for a person of ordinary skill in the art to modify *Asmussen*’s processor using *Marley*’s teachings of having a processor receive a single user input from a remote control for making an outbound a video call (i.e., a “dial” command), and in response having the processor render the camera and microphone active. We also agree that it would have been a relatively straightforward modification to have *Asmussen*’s processor display information indicating an outbound videophone call on the display, as *Asmussen*’s set top terminal already contains the necessary components for displaying the called party’s telephone number as taught by *Marley*.

Institution Decision, 89.

However, Dr. Lippman has not shown that *Marley* contains a single processor as required by Claim 1 (elements [1.d]-[1.g]) upon which Claim 5 depends. In fact, *Marley* discloses two processors, a primary audio/video processor (PAVP) and a video telephone processor (VTP). Ex. 1006, at [0015]. The VTP is

responsible for video processing “specifically directed to controlling and managing video telephone functions” while the PVAP “performs the types of audio and video processing typically associated with DVR-capable set-top appliances, including: routing incoming signals to/from a Multiple System Operator (‘MSO’).” *Id.* at [0015].

Furthermore, in Dr. Lippman’s discussion of Claim 5, he notes that “Marley teaches that the PAVP and the video telephone processor (VTP) work together to perform the above-discussed functionality.” Ex. 1003, ¶169 referring to ¶168. Dr. Lippman then points to the PAVP as the processor that “performs the step of receiving the input and rendering the camera and microphone operative” (*Id.* at ¶170) and notes that “*Marley* expressly teaches the processors working ‘in conjunction’ to provide the real time image at the calling party’s monitor.” *Id.* at ¶170. However, it is not made clear that either of the processors satisfy the requirements of Claim 5 and the claims on which it depends, since the two processors are responsible for entirely different functionalities. Ex.1006, at [0015],[0019]-[0022].

Therefore, Petitioner and Dr. Lippman have not shown that a POSITA would be motivated to combine *Asmussen* and *Bear* with *Marley*.

2. Grounds 4-6: Petitioner Failed to Establish A Motivation To Combine *Asmussen* and *Bear* with *Lindstrom*

Petitioner fails to show why and how a POSITA would combine *Asmussen* and *Bear* with *Lindstrom*. The Petition uses *Lindstrom* mostly to satisfy the “network interface” of claim element [1.a]. Petition, at 69, 73-74. The Petition, however, fails to provide any explanation as to why a POSITA would have been motivated to include a single out-of-band tuner for receiving video-on-demand and videophone information in the combination of *Asmussen* and *Bear* (per Ground 4) by relying on the teachings of *Lindstrom* given the particular design requirements of each system. Ex. 2021, at ¶166.

As discussed below, the design requirements for the combination of *Asmussen* and *Bear* (per Ground 4) are substantially different than the system in *Lindstrom*. Ex. 2021, at ¶167. In addition, a POSITA would not be motivated to combine the teachings of the combination of *Asmussen* and *Bear* with *Lindstrom* because they are directed to solving different problems and use different structures to solve these problems. Ex. 2021, at ¶168.

Lindstrom discloses “a receiver having an in-band tuner and an out-of-band tuner integrated on a single IC.” Ex.1008, Figure 1, [0005]. The features disclosed include controlling the power of and the signal strength to the out-of-band tuner (Ex. 1008, at Abstract) where the in-band tuner receives cable television channels

and the out-of-band tuner receives content such as video-on-demand, pay-per-view channels and videophone signals. *Id.* at [0003], [0016]-[0017].

Petitioner never explains how a POSITA would implement a single out-of-band tuner for receiving video-on-demand and videophone information as discussed in *Lindstrom* to the now hybrid set-top box/personal computer combination of *Asmussen* and *Bear*. Ex. 2021, at ¶170. For the discussed combination in Claim 1(a), Petitioner improperly focused on and explained *only* how a POSITA would modify *Asmussen alone* to be combined with *Lindstrom* (e.g., the modification of *Assumen's* receiver 750) and *not* how a POSITA would have modified the *combination of Asmussen and Bear* as required for Ground 4. *See* Petition, at 72-73.

Further, just as a POSITA would not combine *Asmussen* and *Marley*, a POSITA would also not combine *Asmussen* with *Lindstrom*. Dr. Lippman states “*Lindstrom* expressly teaches a set top box that contains an integrated circuit that further contains within it a single out-of-band tuner” (Ex.1003, ¶189) and “One obvious and predictable configuration for modifying *Asmussen* would have been to substitute *Asmussen's* tuner 603 and receiver 750 with that of *Lindstrom's* integrated circuit 100.” Ex.1003, ¶191. However, *Asmussen's* set top terminal is “achieved through a set of hardware upgrades” which “[provide] additional

advanced features and functional capabilities.” Ex.1004, at 3:31-41. *Asmussen* further notes that a “hardware upgrade for adding video call functionality to a set top terminal is also disclosed.” Ex.1004, at Abstract. The Turbo Card “provides functionality to perform video calls using the set to terminal” *Id.* at 17:25-26. Thus, incorporating *Linstrom*’s IC in a single housing runs counter to *Asmussen*’s teaching of using hardware upgrades to achieve advanced features and functionality. Ex. 2021, at ¶173.

For all of the foregoing reasons, a POSITA would not combine *Asmussen* and *Lindstrom*.

3. Grounds 3 and 6: Petitioner Failed to Establish A Motivation To Combine *Asmussen* and *Bear* with *DeFazio*

Petitioner fails to show why and how a POSITA would combine *Asmussen* and *Bear* with *DeFazio*.

A POSITA would not be motivated to combine the teachings of *Asmussen*, *Bear*, and *Marley* with *DeFazio* because they are directed to solving different problems and use different structures to solve these problems; *see* Sections II.B.1-3, 5, III.A.4, and III.B.1. A POSITA would not be motivated to modify *Asmussen*, a set top box system, to include both an A/V capture application designed for use in a personal computer as described in *Bear* and another set top box system in *Marley*. Ex. 2021, at ¶164.

IV. CONCLUSION

As Petitioner has not shown obviousness by preponderance of the evidence, the Board should confirm the patentability of the challenged claims of the '991 Patent.

Dated: October 7, 2020

Respectfully submitted,

/Robert G Pluta Reg No 50970 /
Robert G. Pluta (Reg. No. 50,970)
Amanda S. Bonner (Reg. No. 65,224)
MAYER BROWN LLP
71 S. Wacker Drive
Chicago, IL 60606
Telephone: (312) 701-8641
Fax: (312) 706-8144
rpluta@mayerbrown.com

Jamie B. Beaber
(Pro Hac Admission to be Sought)
James A. Fussell (Reg. No. 54,885)
Saqib J. Siddiqui (Reg. No. 68,626)
MAYER BROWN LLP
1999 K Street NW
Washington DC, 20006

Counsel for Maxell, Ltd.

Case IPR2020-00200
Patent No. 10,084,991
Patent Owner's Response

CERTIFICATE OF SERVICE

I hereby certify that on this 7th day of October, 2020, a copy of the attached **PATENT OWNER'S RESPONSE** was served by electronic mail to the attorneys of record, at the following addresses:

Jennifer C. Bailey
Jennifer.Bailey@eriseip.com
PTAB@eriseip.com
Adam P. Seitz
Adam.Seitz@eriseip.com
ERISE IP, P.A.
7015 College Blvd., Suite 700
Overland Park, Kansas 66211
Telephone: (913) 777-5600
Fax: (913) 777-5601

Respectfully submitted,

Date: October 7, 2020

By: /Robert G Pluta Reg No 50970/

Robert G. Pluta
MAYER BROWN LLP

CERTIFICATION PURSUANT TO 37 C.F.R. § 42.24(d)

Pursuant to 37 C.F.R. § 42.24(d), the undersigned certifies that **PATENT OWNER'S RESPONSE TO PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 10,084,991** complies with the type-volume limitation of 37 C.F.R. § 42.24(b). The word count application of the word processing progeam used to prepare this paper states that the Response contains 8,432 words, excluding the parts of the brief exempted by 37 C.F.R. § 42.24(a)(1) and 42.24(b).

Respectfully submitted,

Date: October 7, 2020

By: /Robert G Pluta Reg No 50970/
Robert G. Pluta
MAYER BROWN LLP