UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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YEALINK (USA) NETWORK TECHNOLOGY CO., LTD., and
YEALINK NETWORK TECHNOLOGY CO., LTD.
Petitioner,

v.

Barco NV
Patent Owner.

US Patent No. 10,684,972
Filing Date: December 29, 2017
Issue Date: June 16, 2020
Title: Method and System for Making Functional Devices Available to Participants
of Meetings

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Inter Partes Review No.: IPR2025-00491

**PETITION FOR *INTER PARTES* REVIEW OF
US PATENT NO. 10,684,972**

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Ex-1022	U.S. Patent Application Publication No. 2009/0172219 ("Mardiks
Ex-1023	English Translation of Japanese Patent Application Publication No. 2008-165007 ("Uchida")
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Ex-1027	EZAir Press Release, "EZAir Wireless PC to TV Solutions Now Available Across Europe," March 16, 2011
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II.   INTRODUCTION

Petitioner requests *inter partes* review of claims 1-18 of U.S. Patent No. 10,684,972 ("'972 patent") assigned to Barco NV ("Patent Owner"). The '972 patent discloses a system for video conferencing in which user computers can connect to remote displays or speakers (*i.e.*, "functional devices") that is remarkably similar to earlier-filed patents. For example, Office rejected the claims several times based on co-owned U.S. Publication No. 2015/0121466 ("Brands"). The Office eventually granted the '972 patent over Brands and other prior art due to amendments including "*endpoints*" (*e.g.*, speakerphone or webcam) and "*unified communication*" (*e.g.*, Skype) Ex-1001, 2:30-31, 13:49-55, 19:52-55.

The Patent Owner has another earlier-filed application, U.S. Patent Publication No. 2015/0169477 ("Beel," Ex-1005), which the '972 patent admits,

> shows an arrangement of components that can be used in embodiments of the present invention. This figure is FIG. 11 of WO 2013/037980 entitled "Electronic tools and methods with audio for meetings" which is incorporated herein by reference with respect to FIG. 11 thereof and also in its entirety.

Ex-1001, 4:28-33. The examiner never considered this reference on the record alone or in combination with other references, such as U.S. Patent No. 8,369,498 ("Dinka," Ex-1006), that disclose using Skype. Furthermore, many other prior art references, for example U.S. Publication No. 2016/0014172A1 ("Van de Laar," Ex-1007) and

U.S. Publication No. 2010/0295994 ("Kaplan," Ex-1008), taught well known and commonly used "*unified communication*" systems having "*endpoints*."

III. MANDATORY NOTICES UNDER 37 C.F.R. § 42.8(B)(1)-(4)

A. Real Parties-In-Interest

The real parties-in-interest are Yealink (USA) Network Technology Co., Ltd. and Yealink Network Technology Co., Ltd.

B. Related Matters

The '972 patent is related to IPR2024-01436, IPR2024-01437, IPR2024-01438 and IPR2024-01439.

C. Counsel and Service Information

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Petitioners consent to electronic service when sent to each of the above emails.

D. Payment of fees

The PTO is authorized to charge any fees due during this proceeding to Deposit Account No. 30827.

IV. GROUNDS FOR STANDING

Yealink certifies the '972 patent is available for IPR, and Yealink is not barred or estopped from requesting IPR challenging the claims of the '972 patent.

V. PRECISE RELIEF REQUESTED

Petitioners respectfully request cancelation of claims 1-18 of the '972 patent based on the following grounds:

Ground 1: Claims 1-18, are unpatentable under pre-AIA 35 U.S.C. § 103(a) as being obvious over Beel in view of Dinka, AAPA, and optionally Christison.

Ground 2: Claims 1-18 are unpatentable under pre-AIA 35 U.S.C. § 103(a) as being obvious over Kaplan in view of Van de Laar, AAPA, and optionally Christison.

For purposes of this Petition only, Petitioners treat December 29, 2017, as the priority date for the challenged claims.

VI. THE '972 PATENT

A. Prosecution History

The '972 patent issued from U.S. Application No. 15/858,668 ("the '668 Application"), which was filed on, and has priority to, December 29, 2017. It does not have any earlier priority claims. *See* Ex-1004 for the entire prosecution history.

Original claim 1 of the '972 patent recited, in part:

> the base unit having a transmitter and the first peripheral device having a receiver and at least one fixed or a configurable endpoint of the functional device exposed on the first peripheral device;

Ex. 1004, 59.

On March 28, 2019, the Examiner issued a Non-Final Rejection of the claims on two anticipation grounds, Brands (U.S. Publication No. 2015/0121466) and Leete, III (U.S. Publication No. 2014/0362161). *See* Ex-1004, 174-83; Ex-1002, ¶63. In response, the Patent Owner amended claim 1 as follows:

> the base unit having a transmitter and the first peripheral device having a receiver and at least one fixed or a configurable endpoint, <u>where the at least one fixed or a configurable endpoint is a data source or a data sink which is able to store data</u>, of the functional device exposed <u>or made available</u> on the first peripheral device.

Ex-1004, 309 (underlining in original). The Patent Owner argued, "[T]he exposed endpoints for functional devices allow these devices to be <u>controlled by the peripheral device</u> and to appear as if they were local to the processing device," and that the prior art, instead, allowed the functional devices to "be linked to the network

and linked by a network to the router or the base node." Ex-1004, 316 (emphasis original); Ex-1002, ¶64.

On October 11, 2019, the Examiner issued a Final Rejection of the claims on a third anticipation ground, based on Christison (U.S. Patent No. 7,761,627). *See* Ex-1004, 329-36. In response, the Patent Owner amended the claims to additionally recite, "<u>wherein the processing device is adapted to host a unified communication between two or more processing devices,</u>" which the Examiner found was allegedly allowable subject matter in the earlier Final Rejection. Ex-1004, 363, 335 (underlining in original); Ex-1002, ¶¶65-66.

Based on Patent Owner's amendment, the Examiner issued a Notice of Allowance on January 29, 2020, whereafter the '668 Application was issued as the '972 patent on June 16, 2020. Ex-1004, 368, 401; Ex-1002, ¶¶65-66.

VII. LEGAL STANDARDS

A. Person of Ordinary Skill in the Art ("POSA")

The '972 patent is directed to a system and method for connecting a processing device to a functional device to be used by participants of meetings. *See* Ex. 1001, 1:46-54. In *Barco, Inc. et al v. Yealink (USA) Network Technology Co., Ltd. et al*, 2:2023-cv-00521 (EDTX) ("EDTX Case"), Barco alleged that a person having ordinary skill in the art at the time of the alleged invention ("POSA") would likely have had a Master of Science (M.S.) degree in electrical engineering or

computer science, and five years of work experience in a related field. Additional

educational experience could substitute for some of the work experience.

Considering the overlapping subject matter of the '972 patent to the patents involved

in the EDTX Case, and solely for the purposes of this proceeding, Petitioners adopt

this definition of a POSA. *See* Ex-1002, ¶¶36-37.

B. Claim Construction

The claim constructions proposed herein are limited to this Petition and the

'972 patent and shall not be construed as admissions or constructions in any other

proceeding or patent, including Unified Patent Court proceeding

UPC_CFI_582/2024, concerning European Patent No. 3,732,827 B1 (the "'827

patent"), which is related to the '972 patent. The '972 patent and the '827 patent

contain different specifications, prosecution histories, and claim limitations.

Therefore, a POSA would not necessarily reach the same construction for, and may

apply different constructions to, similar or identical terms between each proceeding.

Ex-1002, ¶67-73.

1. *"functional device"* (Claims 1-3, 5-11, 13-16)

The '972 patent defines the *"functional device"* as, "a second peripheral

device connected in some way to a base unit." Ex-1001, 7:58-59. Petitioner therefore

applies this construction. Ex-1002, ¶74.

2. *"generic communications protocol"* (Claims 1, 9, 15)

The '972 patent does not define a *"generic communications protocol."* However, the generic communications protocol is used to couple and communicate between the processing device and the first peripheral device. *See* Ex. 1001, claim 1; Ex-1002, ¶75. The '972 patent discloses that a "video signal" (*i.e.*, data) is "transport[ed] (arrow 53) over the plug and play interface using a generic driver, such as over a USB interface using generic pre-installed drivers." Ex. 1001, 15:47-51. As shown in Figs. 1B and 1C, arrow 53 represents communication between the first peripheral device 130 and the processing device 160. Ex-1002, ¶75.
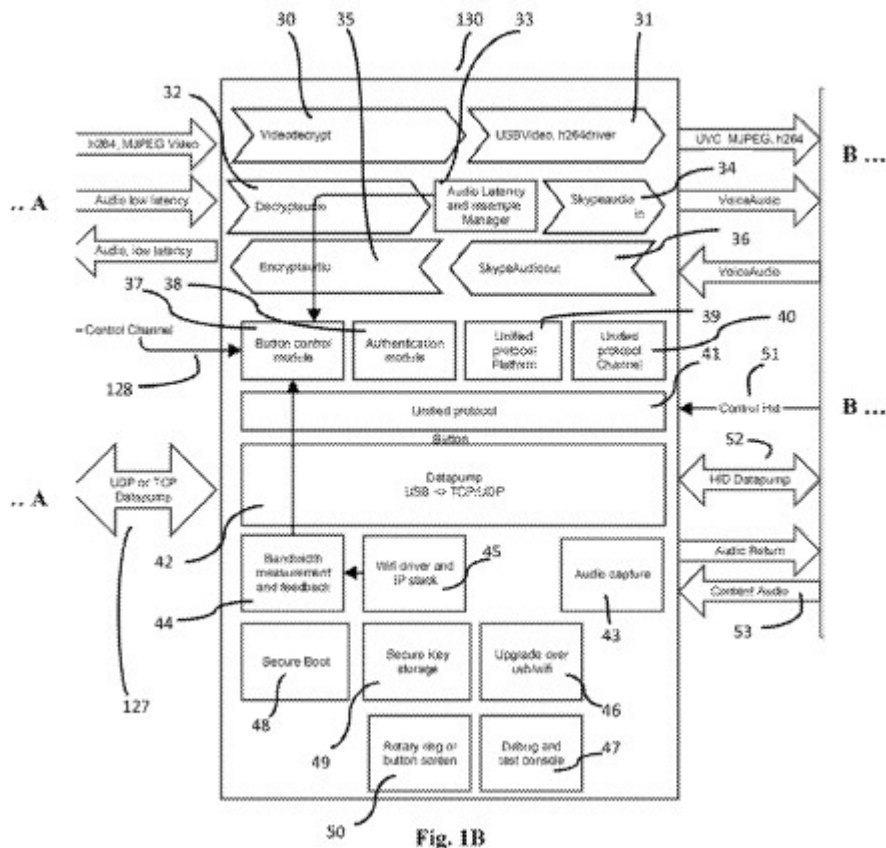
Ex-1001, FIG. 1B
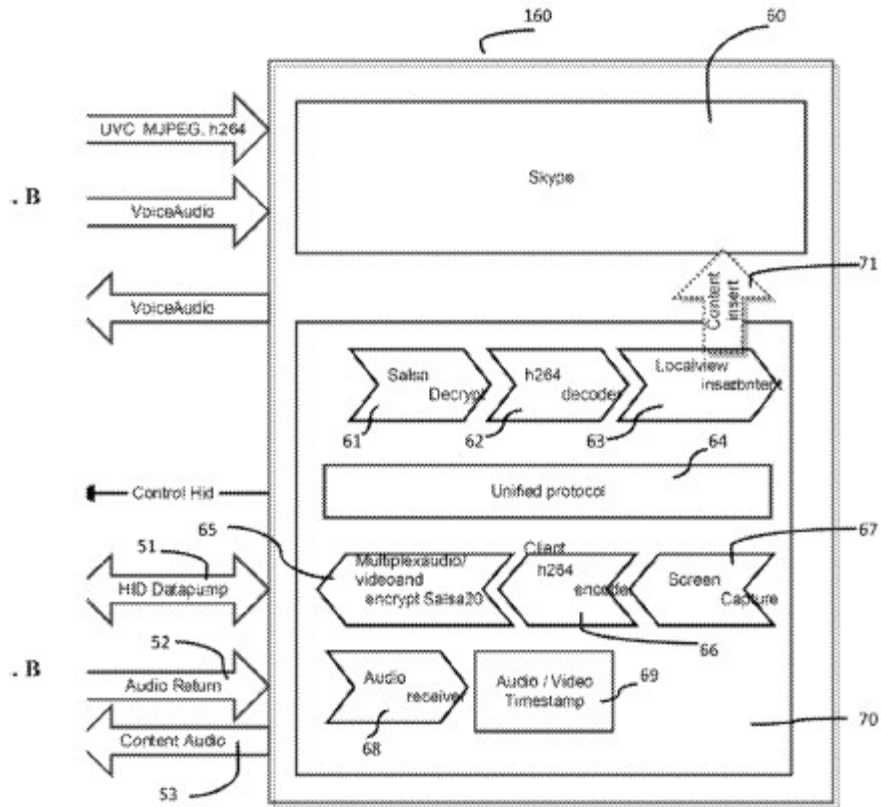
Fig. 1C

Ex-1001, FIG. 1C

The "plug and play interface" is the interface between the first peripheral device and the processing device. Ex-1002, ¶75. A protocol is a set of rules used by two modules or devices to communicate. Ex-1031; Ex-1002, ¶76. Accordingly, the "generic communications protocol" is the protocol used by the pre-installed generic drivers to interface/communicate between the first peripheral device and the processing device. Ex-1002, ¶76.

3. *"coupled ... / coupling ... via a generic communications protocol"* (Claims 1, 9, 15)

The '972 patent does not expressly define "*couple*." Ex-1002, ¶77. The asserted claims require the coupling of the "*first peripheral device*" to the "*processing device via a generic communications protocol*." Ex. 1001, claim 1. *See* § VII.B.2 for construction of "*generic communications protocol*." Accordingly, this limitation means "connected through electronic communication." Ex-1002, ¶77.

4. *"unified communication"* (Claims 1, 5, 9, 13, 15)

The '972 patent defines the "Unified Communications systems or tools" as "audio or audio visual communications such as provided by 'Skype™' or 'Skype™ for Business'. Such software can take over audio and/or visual data provided from a host processing device." Ex-1001, 6:59-63. Ex-1002, ¶78. The '972 patent further explains that "processing devices ... shar[e] the Unified Communication (UC) call such as the Skype call or a Skype for Business call." Ex. 1001, 17:67-18:3. Accordingly, this limitation means "audio or audio/visual communication." Ex-1002, ¶78.

5. *"means for encoding, optionally encrypting"* (Claims 4, 12)

The structure for this limitation is software that encodes and optionally encrypts. Ex-1002, ¶79. The function is encoding and optionally encrypting data. *Id.* This claim is sufficiently definite for purposes of determining patentability. *Samsung*

Electronics America, Inc. v. Prisua Eng'g Corp., 948 F.3d 1342, 1355 (Fed. Cir. 2020) (holding that the Board can find a claim obvious even if a term is indefinite).

> **6.** **"*at least one fixed or a configurable endpoint, where the at least one fixed or a configurable endpoint is a data source or a data sink which is able to store or emit data, of the functional device exposed or made available on the first peripheral device*"** **(Claims 1, 3, 9, 11, 15, 16, 18)**

The '972 patent defines the "*at least one fixed or a configurable endpoint*" as follows:

> "Endpoints" can be described as data sources or sinks and are defined for USB Devices which <u>can be physical devices or virtual devices</u>. In the present invention <u>endpoints should be interpreted broadly as data sources or sinks</u>. Hence <u>data can be stored at an endpoint or emitted</u>. An <u>endpoint can act as a kind of buffer can be</u> [*sic*] <u>defined for physical devices or virtual devices.</u>

Ex-1001, 7:64-8:3 (emphasis added). The quote above further explains that the claimed "endpoints should be interpreted broadly as a data sources or sinks … can act as a kind of buffer." *Id*. A buffer is a temporary storage for digital data that is moving from one place to another, such as data received in a video buffer before it is decoded for presentation on a display. Ex-1002, ¶¶80-81.

The claims of the '972 patent do not clearly identify whether they require that the endpoint be of the "*peripheral device*" or "*functional device*." Ex-1002, ¶82. The claim can be interpreted in two ways, *i.e.*, "*first peripheral device having … at least*

one ... endpoint" or "*at least one ... endpoint ... of the functional device.*" Ex-1002,

¶82. Therefore, Petitioner considers both possibilities.

The '972 patent explains that endpoints are a standard part of the USB specification. Ex-1001, 7:41-55, 16:51-17:5; *see also* Ex-1002, ¶82. FIG. 17 of the '972 patent illustrates "*the first peripheral device having ... at least one fixed or a configurable endpoint,*" *e.g.*, peripheral device 130 having endpoints (132, 134, 136):
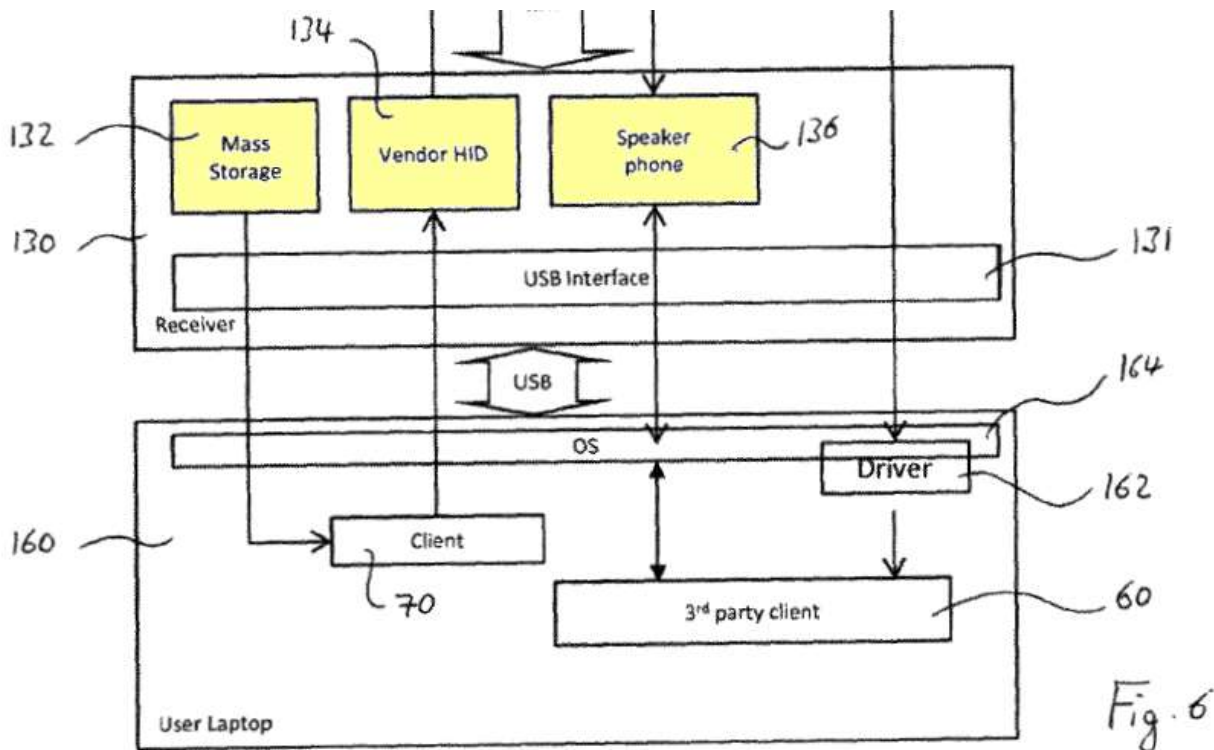
Ex-1001, FIG. 6.
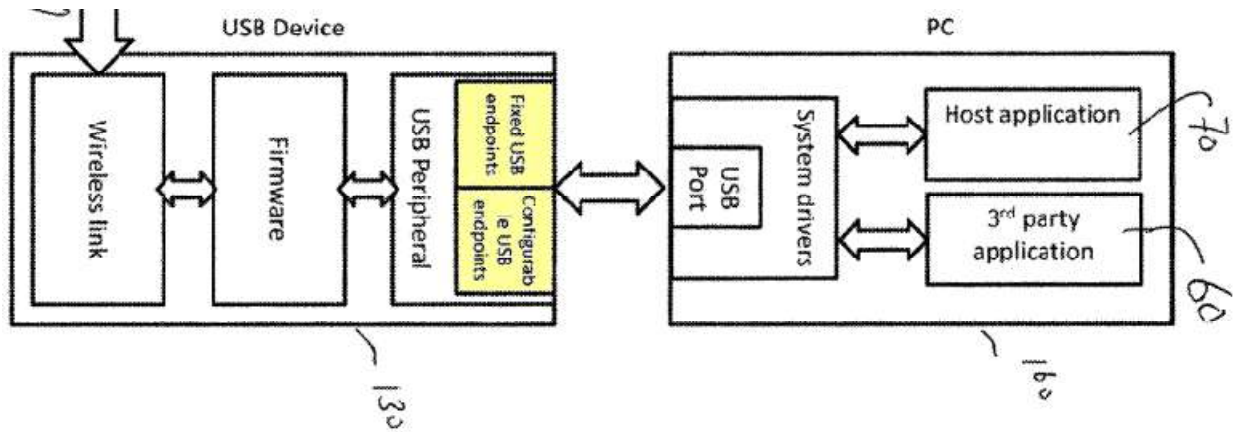
Id., FIG. 17.
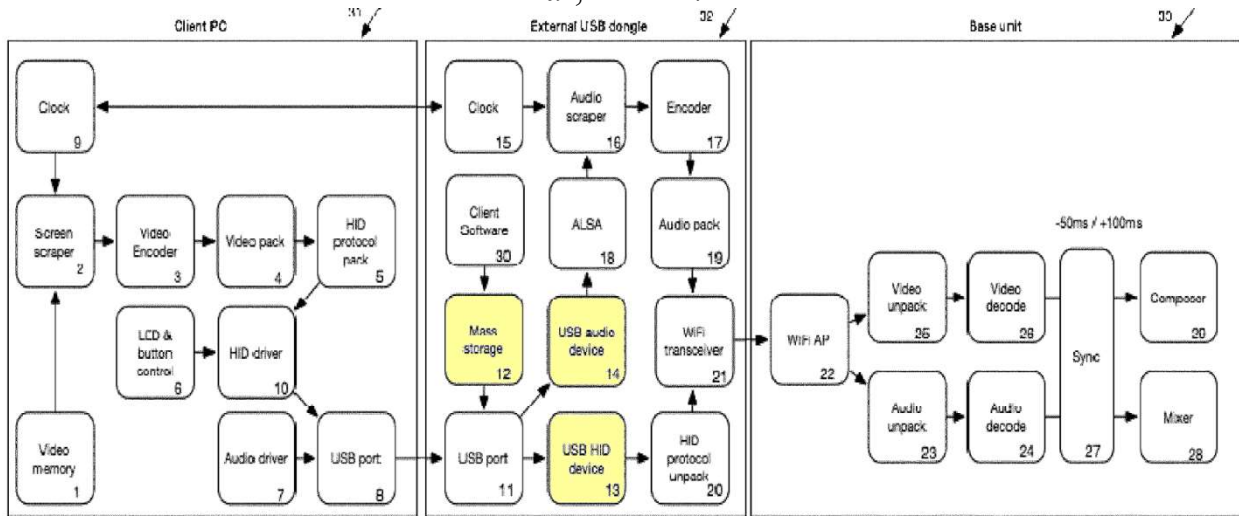
Id., FIG. 4.

The '972 patent also discloses USB endpoints "*of the functional device*" (*e.g.*,

"endpoint from the at least one functional device 91-93 (e.g. the webcam 91 that was

attached to the Base Unit 100) and/or the speakerphone endpoints (both

speakerphone microphone and speakerphone speakers)":

16
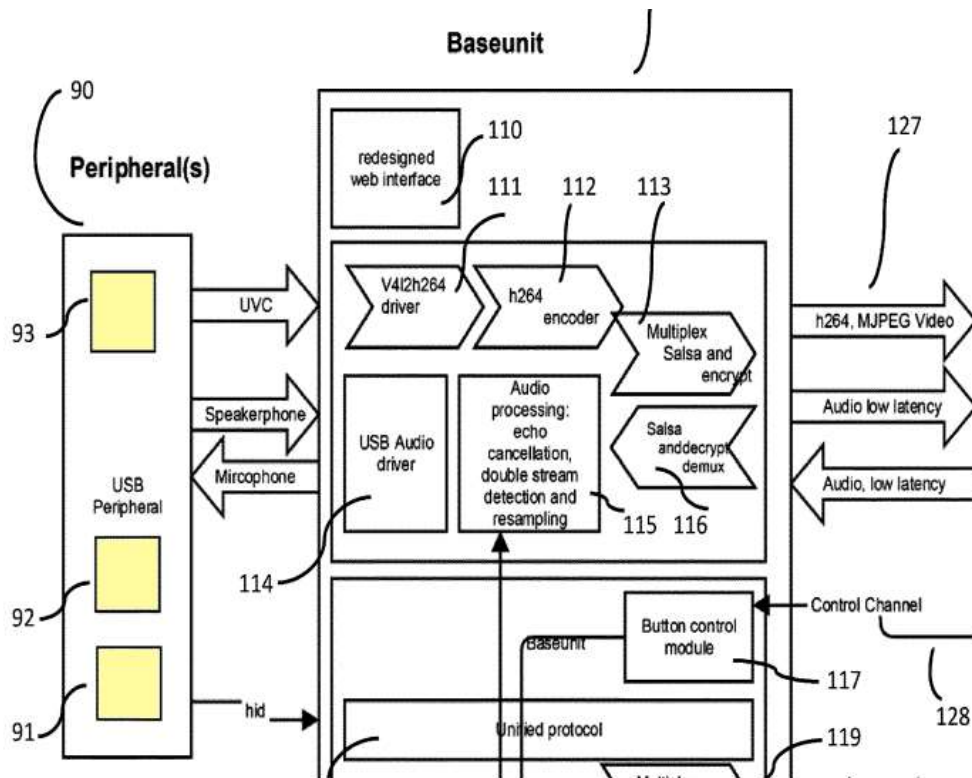
Ex-1001, FIG. 1A.

Ex-1001, 13:49-55; Ex-1002, ¶83. Therefore, the '972 patent discloses USB peripherals connected to both the processing device (*i.e.*, user computer) and the base unit, and the USB specification requires that each USB device have an "*endpoint*." Ex-1002, ¶84.

The '972 patent does not define the difference between "*fixed*" or "*configurable*" endpoints, and these are not commonly understood terms of art. Ex-1002, ¶85. However, the '972 patent explains,

> [F]ixed USB endpoints … are provided for the basic functionality, [and] configurable USB endpoints are configured either when pairing a first peripheral device 130 device with a base unit 100

or over the wireless connection 127 between the processing device 130
and the base unit 100.

Ex-1001, 16:49-60. The context of the terms implies that the "*endpoint*" is either "*configurable*" or it's not, *i.e.*, it's "*fixed.*" Ex-1002, ¶86. To the extent the meaning of this term is reasonably certain, every device is either configurable or not, and therefore this limitation covers both possibilities and does not limit the claim because every device must be either configurable or not configurable. Ex-1002, ¶86. There are no other options. Alternatively, a fixed endpoint could mean a mass storage device, and a configurable endpoint could mean an HID or audio device capable of pairing with a base unit. Ex-1002, ¶86.

This limitation also requires that the "*endpoint*" "*is able to store or emit data, of the functional device.*" This is a feature of USB endpoints. Ex-1002, ¶87. Endpoints are buffers, and buffers, by definition, store and emit data. *Id*.

This limitation also recites, "*the functional device exposed or made available on the first peripheral device.*" The following sections of the '972 patent are relevant to this term:

> The system has the ability to expose second peripheral devices connected to the Base Unit to the first peripheral device transparently as if it were attached to the processing device to which the first peripheral device is connected.

Ex-1001, 7:59-63.

> "A specific device exposes a peripheral device or other device"
> means that the specific device configures one or more endpoints with
> specific descriptor fields.

Id., 8:59-61; Ex-1002, ¶88. "*Exposed*" is not a term of art, and the claim also includes "*made available*" as an alternative. Ex-1002, ¶89. The specification explains that exposed or made available means transferring data, *e.g.*, audio/visual data, between the peripheral device and the functional device. *See*, *e.g.*, *id.* 17:16-18:39; Ex-1002, ¶89.

Patent Owner might argue that "*exposed*" should be construed narrowly to require configuration of descriptor fields, as recited in European Patent No. EP3732827B1. Ex-1012. However, this is only one embodiment of "*exposed*"; for example, the '972 patent uses the term "*exposed*" to cover many implementations, including those that do not require configuring "descriptor fields" (*e.g.*, "By combining one or more functional devices e.g. second peripheral device(s) or part of a second peripheral device and exposing its functionality to the end user through proprietary software."). Ex-1001, 10:7-67; Ex-1002, ¶90.

Accordingly, this limitation means "A data source or sink that is fixed or configurable and used to transfer data between the peripheral device and the functional device." Ex-1002, ¶91.

VIII. OVERVIEW OF THE PRIOR ART

A. Beel

Beel published on June 18, 2015, as U.S. pre-grant publication no. 2015/0169477. Beel is prior art under § 102(a)(1). Beel was not considered on the record during prosecution of the '972 patent, except for admissions that related publication "shows an arrangement of components that can be used in embodiments of the present invention." Ex-1001, 4:28-33; FIG. 4; Ex-1002, ¶92. Beel is also assigned to Barco NV but has a different inventive entity and published more than a year before the '972 patent's priority date.

Beel discloses systems and methods of wirelessly communicating media content between an electronic device and a display via a peripheral device and base node. Ex-1005, ¶¶23, 40, 48. Beel describes its systems and methods in largely identical language to that of the '972 patent. Ex-1002, ¶93.

B. Dinka

Dinka published on February 2, 2013, as U.S. Patent No. 8,369,498. Dinka is prior art under § 102(a)(1). Dinka was not considered on the record during prosecution of the '972 patent. Ex-1002, ¶94.

Dinka is assigned to Skype (INID-73) and discloses methods and systems for communications between multiple computer terminals and televisions. Ex-1006, abstract, 1:12-15. For example, Dinka uses a client application which allows a local user to connect and communicate with other remote users via the network. Ex-1006, 2:44-55. Dinka also discloses bidirectionally sending audio/visual data that is

encoded, decoded, and (de)multiplexed in both directions. *Id.*, abstract, 8:7-51, 9:32-50, 13:1-24, 15:24-32; Ex-1002, ¶95.
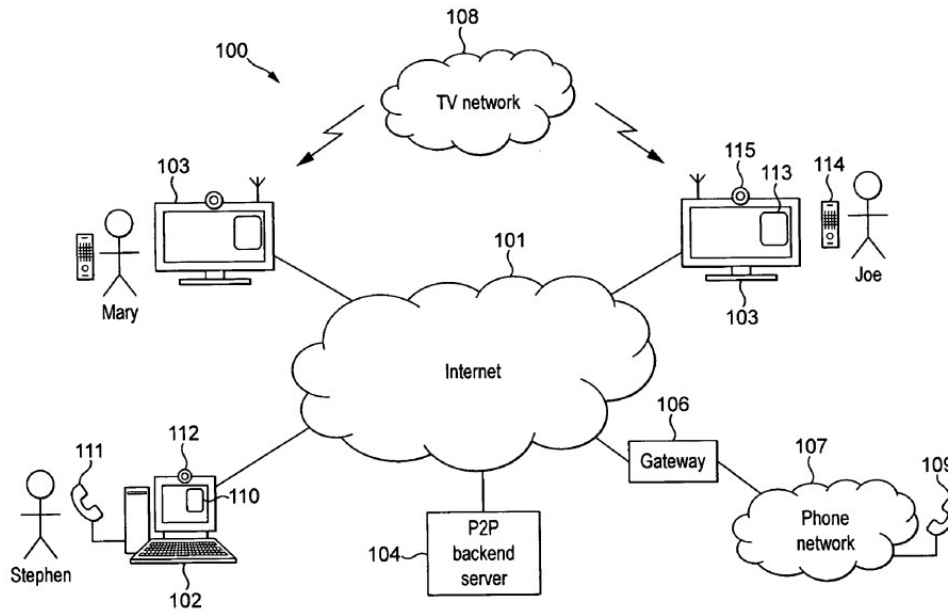
FIG. 1

Ex-1006, FIG. 1.

C. Kaplan

Kaplan published November 25, 2010, as U.S. Publication No. 2010/0295994. Kaplan is prior art under § 102(a)(1). Kaplan was not considered during prosecution of the '972 patent. Ex-1002, ¶96.

Kaplan disclosed methods for transmitting video content between a computing device and display device. Ex-1008, abstract; Ex-1002, ¶97. Kaplan, therefore, describes a communications system 100 in which a computer 220 is wirelessly connected to a display device 210 via a USB transmitter 120. *See, e.g.*, Ex-1008, ¶¶16-18 and FIG. 2, reproduced below; Ex-1002, ¶98. The transmitter 120

is pre-paired with a receiver 110 which is connected to the display device 210, such that a user does not need to configure the wireless connection. Ex-1008, ¶18; Ex-1002, ¶98. In this system, "the user may select a video to be played and the selected video footage may be transmitted from the computer 220 through the transmitter 120 to the receiver 110 and then displayed on the display device 210." Ex-1008, ¶28.
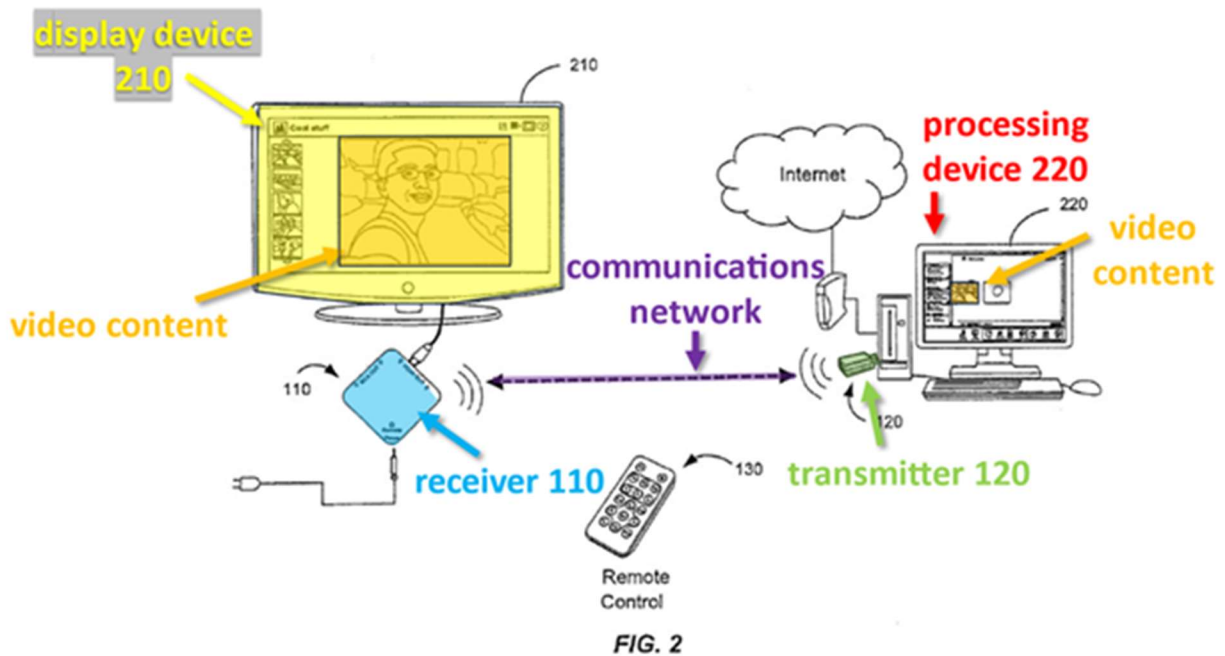
Ex-1008, FIG. 2.

D. Van de Laar

Van De Laar published on June 18, 2015, as U.S. pre-grant publication no. 2016/0014172. Van de Laar is prior art under § 102(a)(1) and was not considered on the record during prosecution of the '972 patent. Ex-1002, ¶99.

Van de Laar discloses a system for connecting mobile devices, which it calls "dockees," such as laptops, to one or more "peripheral[s] so as to control the

peripheral[s] to perform [their] intended functions. Ex-1007, ¶55, 73-74, 80, 82; Ex-

1002, ¶100.
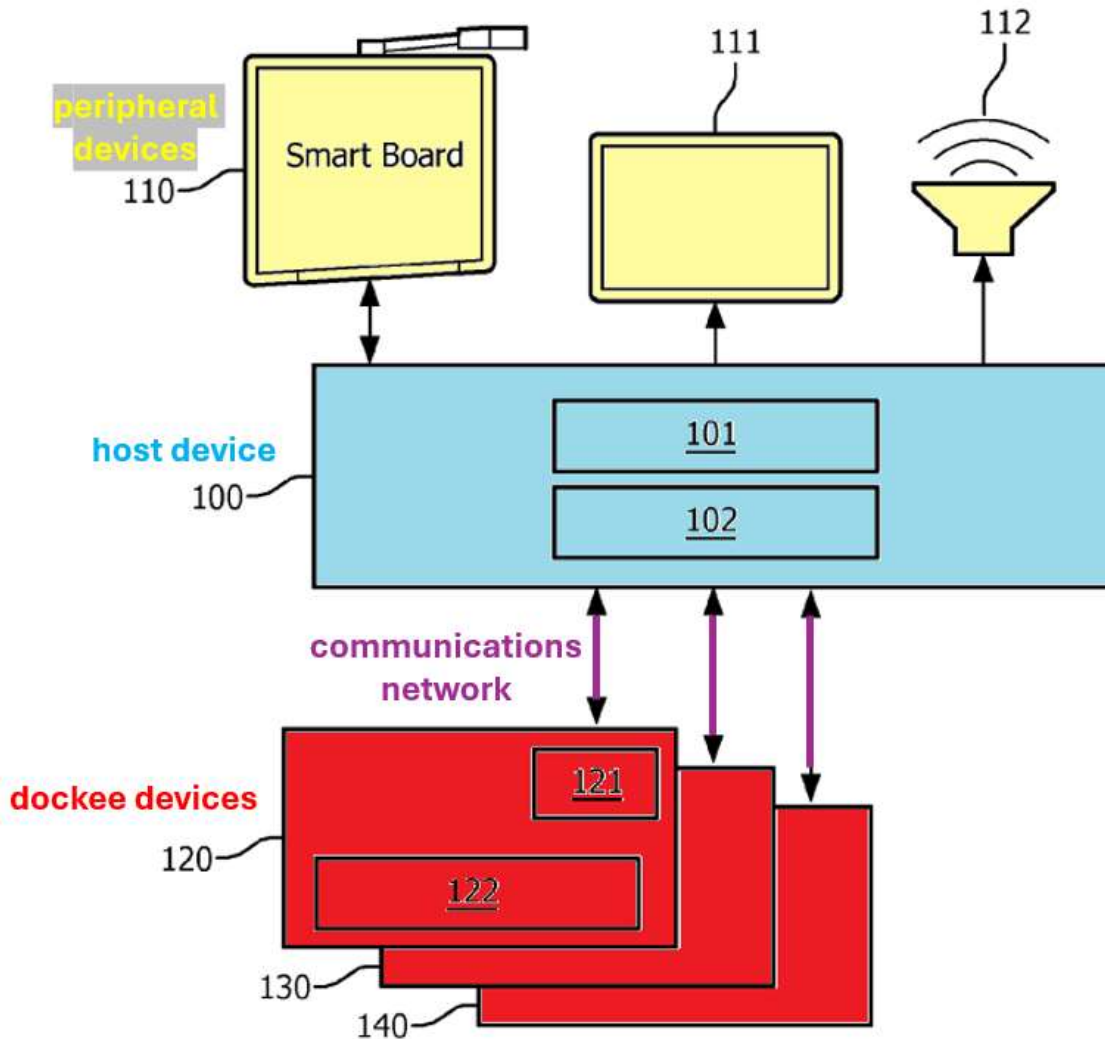
Id. FIG. 1.

The dockees communicate to a host device via a wireless communications network.

Id., ¶¶74-76; Ex-1002, ¶101. The communication between the host device and the

peripheral devices can be through a wired connection, such as HDMI or USB. *Id*.,

¶¶54, 110; Ex-1002, ¶101. The communication within the system can use a unified

communication protocol, such as Skype. *Id*., ¶128; Ex-1002, ¶101.

E. Christison

Christison published on July 20, 2010, as U.S. Patent No. 7,761,627, and is

prior art under § 102 (a)(1). It was considered on the record during prosecution but

overcome with the amendment of the "unified communication" limitation. Ex-1002,

¶102.
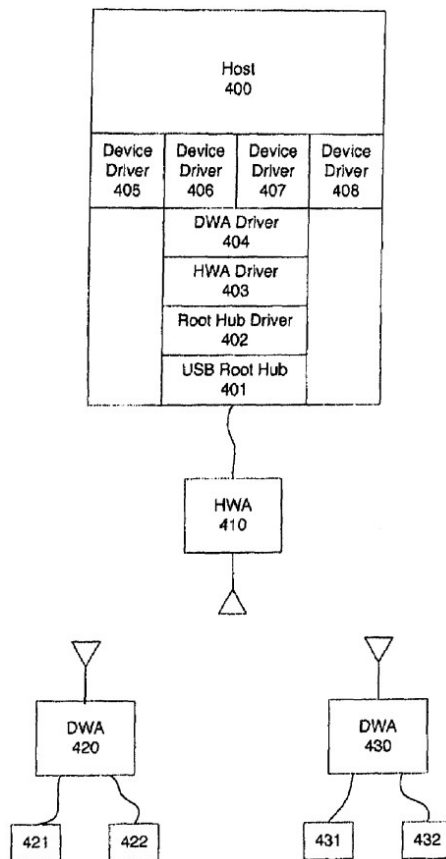
Ex-1012, FIG. 4.

Christison discloses a Host Wire Adapter 410 (HWA) and Device Wire

Adapters 420/430 (DWA) for mimicking wired USB devices (421, 422, 431, 432)

to appear to a PC as a wireless USB device (WUSB). Ex-1011, 3:59-4:16; Ex-1002,

¶103. One of the ways Christison accomplishes this is by configuring USB device

descriptor fields to be compliant with the values for WUSB devices. *Id.*, 6:66-7:5, 9:36-38; Ex-1002, ¶103. This allows Christison to present wireless USB devices as "native devices," which introduces throughput efficiencies over the prior art. *Id.*, 6:13-19; Ex-1002, ¶103.

F.   Applicant-Admitted Prior Art ("AAPA")

The '972 patent admits that known web-conferencing tools, such as Skype, "can take over audio and/or visual data provided from a host processing device." Ex-1001, 6:59-63; *see also*, Ex-1002, ¶¶60-62. Skype has been known since at least 2012, and has expanded to include many of the limitations presented by the '972 patent by at least 2015. Ex-1009; Ex-1013; Ex-1002, ¶¶60-62, 104. The '972 patent also admits that Beel

> shows an arrangement of components that can be used in embodiments of the present invention. This figure is FIG. 11 of WO 2013/037980 entitled 'Electronic tools and methods with audio for meetings' which is incorporated herein by reference with respect to FIG. 11 thereof and also in its entirety.

Ex-1001, 4:28-33; Ex-1002, ¶105. The '972 patent further admits, concerning Beel's FIG. 11, which is identical to FIG. 4 of the '972 patent,

> These are fixed and are a combination of vendor specific endpoints and a number of standard endpoints and can be interpreted or understood as a custom Driver, a default OS driver and/or a host

application as has been described with reference to FIG. 4 do screen

sharing and audio.

Ex-1001, 16:51-56; Ex-1002, ¶106.

IX. THE GROUNDS DEMONSTRATING A REASONABLE LIKELIHOOD OF PREVAILING

A. Claims 1-18 of the '972 Patent Are Unpatentable as Obvious Over Beel Patent in View of Dinka, AAPA, and Optionally Christison

1. Rationale to Combine

Both Beel and Dinka disclose systems of online audio/visual conferences

using various communication applications. Ex-1005, abstract, ¶¶85-89, 118, 253,

259; Ex-1006, FIG. 1, abstract, 2:44-3:5; Ex-1002, ¶107. Dinka is a Skype patent

(Ex-1006 (INID-73)), and Skype is an example of an application that allows for

unified communication calls, as defined by the '972 patent. Ex-1001, FIG. 1C, 6:59-

63; Ex-1002, ¶107. Further, the Skype technology itself allows for group

communication calls, and which has the ability to include video sharing/streaming

and the use of "screen sharing" to share one user's screen contents to another user's

device. *See* Ex-1013; Ex-1002, ¶107.

Beel discloses using similar software for "electronic meeting systems,"

"groupware," and "web conferencing systems." Ex-1005, ¶¶85-89. It also discloses

embodiments in which the software can be installed directly on the processing device.

Id., ¶¶215-248; Ex-1002, ¶108. Furthermore, the '972 patent contains AAPA that

Skype is a known way to perform the web conferencing disclosed by Beel. Ex-1001,

6:59-63, 7:66-8:21; *see also* Ex-1009 (showing Skype was available online in 2012); Ex-1013. Therefore, motivated to improve similar systems in the same manner, a POSA would have been motivated to combine Beel and Dinka. Ex-1002, ¶109. The combination would result in the use of the well-known and widely used Skype application, or similar prior art unified communication call software to build on Beel's data sharing technology. Ex-1002, ¶109. The combination of Beel and Dinka would create the predictable result of a web conferencing system using a unified communication call, such as Skype, wherein the system could utilize one or more functional devices' capabilities. Ex-1002, ¶109.

Christison discloses a method of wirelessly connecting functional devices to personal computers via a wireless peripheral device. Ex-1012, abstract. A POSA would recognize that connecting wireless functional devices to computers was well known in the art, and would recognize that Christison teaches one efficient example of presenting wireless USB devices as "native devices." Ex-1012, 6:13-19; Ex-1002, ¶110. Beel teaches connecting remote virtual devices to a client computer. Ex-1005, ¶¶43, 50, 313, 314. Christison teaches one way of effecting Beel's virtual devices by presenting a wireless USB device as "native." Ex-1012, abstract. Beel, Dinka, and Christison could have been combined by using Christison's known technique of presenting a remote device as native to improve or suggest one way for Beel to implement its disclosed virtual devices. Ex-1002, ¶111. The combination would

create the predictable result of a web conferencing system that used USB protocols to present remote functional devices as local or "native" functional devices to host a unified communication call, such as Skype, wherein the system could utilize one or more functional devices' capabilities. Ex-1002, ¶111.

2. Claim 1

a) *A system for connecting a processing device to a functional device connected to or in a base unit of a communications network,*

Beel discloses this limitation largely *verbatim*: "A system for connecting a processing device to a communications network." Ex-1005, claim 92. Ex-1002, ¶112-114. Beel also discloses, "*connecting a processing device to a functional device connected to or in a base unit of a communications network*":

> Optional equipment can be cameras 39, 40, 41 for recording the progress of the meeting. These cameras can be linked by a network 51, e.g. a cable network to the router 42 and/or the base node 36. Another optional item is a microphone or microphones 38 that can be used to transfer audio, e.g. to the processing devices 31 and to loud speakers (not shown) attached to the base node 36 or part of the display 44.

Ex-1005, ¶120 (emphasis added); *see also*, ¶¶41, 88, 310, FIG. 1A and 1b. Examples of "*functional device[s]*" include cameras, microphones, speakers, and displays, as defined by claim 2 of the '972 patent. Ex-1001, claim 2; Ex-1002, ¶115.

> b) **the processing device having a memory, a display and an operating system,**

Beel discloses this limitation *verbatim*. *See e.g.*, Ex-1005, ¶¶41, 56, 310, and claims 82 and 92; *see also id.*, abstract, ¶¶45, 64, 68, 71, 94, 125, 196; Ex-1002, ¶116.

> c) **the system comprising: a first peripheral device being adapted to be coupled to the processing device via a generic communications protocol,**

Beel and the '972 patent disclose similar peripheral devices, "a USB dongle" *Compare* Ex-1005, ¶¶58, 195 with Ex-1001, 7:56-57 and 9:10-22; Ex-1002, ¶117. The figures also illustrate similar dongles:
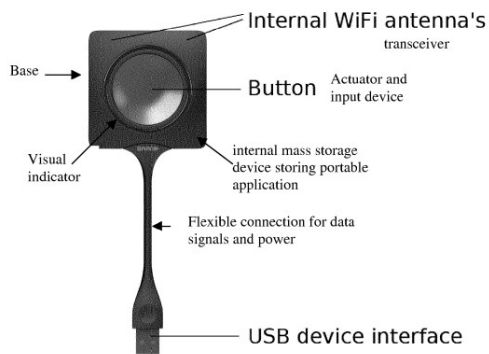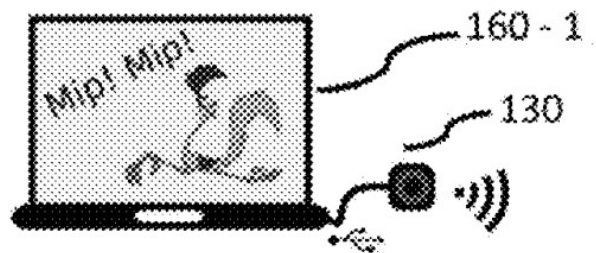
Ex-1001, FIG. 5 (peripheral device 130)

Ex-1005, FIG. 10

Furthermore, Beel discloses "*a first peripheral device being adapted to be coupled to the processing device*" (*e.g.*, "peripheral device comprising a connector adapted to couple to a port of a user processing device 31." Ex-1005, ¶125 (emphasis added); Ex-1002, ¶118.

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Beel also discloses that, beyond the physical coupling achieved at the port of the processing device, a communicative coupling is achieved "*via a generic communications protocol*" (*e.g.*, "the processing device having … at least one pre-installed generic driver providing <u>a generic communications protocol for communication between processing device and a standard class of peripheral devices</u>.") Ex-1005, ¶56 (emphasis added); *see also*, *id*. ("setting up, by means of the pre-installed generic driver of the operating system, a means for communication between the peripheral device and the processing device"); Ex-1002, ¶119-120.

d) the base unit having a transmitter and

Beel discloses, "*the base unit having a transmitter*":

> The base node 36 for communicating with the connection unit 47 has a receiver 63 which can be included in the connection unit 49 or integrated into the base node 36. <u>The receiver is preferably a transceiver.</u> Optionally the transmitter/receiver can be a wireless <u>transmitter</u>/receiver.

Ex-1005, ¶129 (emphasis added); Ex-1002, ¶121.

e) the first peripheral device having a receiver and

Beel discloses, "*the first peripheral device having a receiver*":

> The connection unit 47 for communicating with said base node 36 has a network interface e.g. comprising a transmitter 62. <u>The transmitter 62 is preferably a transceiver.</u> Optionally the transmitter/<u>receiver</u> can be a wireless transmitter/receiver.

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Ex-1005, ¶128 (emphasis added); *see also*, ¶¶120, 125; Ex-1002, ¶122.

> ***f)*** ***at least one fixed or a configurable endpoint, where the at least one fixed or a configurable endpoint is a data source or a data sink which is able to store or emit data, of the functional device exposed or made available on the first peripheral device;***

This claim is ambiguous because it is unclear whether it requires "*the peripheral device having [an] endpoint*," or an "*endpoint of the functional device*." Ex-1002, ¶123. First, Beel discloses the "*the first peripheral device having … at least one fixed or a configurable endpoint*," *e.g.*, "Mass storage device 12," "USB audio device 14," and "USB HID device 13." Ex-1005, FIG. 11, ¶¶320-23; Ex-1002, ¶124. Indeed, the '972 patent discloses the identical figure illustrating the same endpoints. Ex-1001, FIG. 4, 4:28-33, 16:44-67 (admitting that Beel's FIG. 11 discloses endpoints); Ex-1002, ¶124. These endpoints are either "*fixed*" (*e.g.*, a mass storage device) or "*configurable*" (*e.g.*, virtual audio device.) *Id.*, 16:44-67, Ex-1005, ¶50; Ex-1002, ¶124. Beel also discloses an "*endpoint*" … *of the functional device*," *e.g.*, A/V components connected to the base unit. *Id.*, 12:60-13:8, 4:5-11, 16:44-67 and claim 2; Ex-1005, ¶¶43, 50, 313-17; Ex-1002, ¶125. The "*endpoint … of the functional device*" is either "*fixed*" or "*configurable*" because it would either obviously be configured or fixed to be able to provide A/V functions, such as a speaker or a display. Ex-1001, 4:5-11, 16:44-67, 22:32-34 (explaining that FIG. 15 illustrates using Beel's FIG. 11 to communicate with a peripheral device); Ex-1005,

¶¶43, 50, 313-17; Ex-1002, ¶125. Further, the use of USB devices are known to include "endpoints" to transfer data. Ex-1002, ¶125.

The '972 patent also admits that Beel's FIG. 11 (which the '972 patent copied as FIG. 4 and incorporated by reference) discloses endpoints:

> These are fixed and are a combination of vendor specific endpoints and a number of standard endpoints and can be interpreted or understood as a custom Driver, a default OS driver and/or a host application as has been described with reference to FIG. 4 do screen sharing and audio.

Ex-1001, 4:28-33 and 15:62-16:6; Ex-1002, ¶126. Therefore, Beel discloses the "*endpoint*" irrespective of whether it must be on the "*peripheral device*" or "*functional device*," which the claim does not recite clearly. Ex-1002, ¶127.

Beel explains that "*the at least one fixed or a configurable endpoint is a data source or a data sink which is able to store or emit data, of the functional device exposed or made available on the first peripheral device*":

> In an embodiment audio data is captured through a virtual sound card interface added as a logical device over the physical interface provided in the peripheral device. On the processing device only a generic sound driver such as a USB sound driver is required which is generally standard on any modern processing devices such as a PC (UAC1 or UAC2).

Ex-1005, ¶43.

The peripheral device preferably acts as a composite device comprising for instance a (virtual) audio speaker device. However instead of operating like a speaker the audio is channeled over the communications network. The peripheral device can preferably capture the audio stream with a device driver, for instance a built in ALSA UAC1, and stream the audio to the base unit. … The peripheral device then encodes this time stamp into the audio stream (for instance RTP audio stream) that is streamed to the base unit. At the receiving end, the audio and video streams are then preferably recombined taking into account the time stamp to reach lip synchronization.

Id., ¶317; *see also*, *id*. ¶¶313-316; Ex-1002, ¶128. Beel's endpoints allow the "*functional device*," such as an A/V components connected to the base unit, to be "*exposed or made available on the first peripheral device*." *Id*., ¶71 ("a third software code portion [on the peripheral device] for receiving media content from the network and for displaying the media content on the display"); ¶120, (the base node may be coupled to "microphones 38 that can be used to transfer audio, e.g. <u>to the processing devices 31 and to loud speakers (not shown)</u>") (emphasis added); *see also* ¶¶43, 50, 56, 75, 93, 119-122, 126, 298, 310-11; Ex-1002, ¶129. Beel states that others may attend the meeting from "remote destinations." *Id*., ¶118*, see also*, ¶¶71, 85, 88-89, 253-71.

The disclosure of the peripheral device acting as a "virtual audio device" using a USB Audio Class (UAC) indicates that endpoints of the functional device are

"*exposed or made available on the first peripheral device*" because, for example, Beel states, "[A]udio data is captured at this interface 8-11 internally in the peripheral device 32. This data is then optionally re-encoded and <u>streamed to the communications network to which the peripheral device 32 has access</u>." *Id*., ¶319 (emphasis added); Ex-1002, ¶130. Accordingly, the peripheral device of Beel can have a composite device able to store and emit virtual audio/visual data to endpoints, such as a speaker or display. Ex-1002, ¶130.

To the extent the Patent Owner argues that "*exposed or made available*" means something narrow, such as "configuring one or more endpoints with descriptor fields" as the related European Patent No. EP3732827B1 recites after amendments (Ex-1012), Petitioner relies optionally on Christison, which renders obvious configuring descriptor fields, which is applicable to USB devices. Ex-1011, 6:66-7:5; Ex-1002, ¶¶131-132. Christison claims,

> intercept a device descriptor request from said first wireless USB enabled device;
>
> read a device descriptor from said wired USB enabled device;
>
> modify said device descriptor so that it is consistent with a device descriptor for any wireless USB enabled device as specified by a predetermined wireless USB standard; and
>
> present said wired USB enabled device as said native wireless USB enabled device by providing said modified device descriptor to said first wireless USB enabled device.

Id., 9:21-32, 9:36-38. Therefore, to the extent that the Beel-Dinka combination does not disclose a narrower, unsupported construction of "*exposed*," the additional combination with Christison does. Ex-1002, ¶133.

> **g) the base unit and the first peripheral device being adapted to transmit and receive data respectively over the communications network from the functional device to the processing device via the at least one fixed or configurable endpoint using the generic communications protocol for communication between the processing device and the first peripheral device,**

Beel discloses "*the base unit*" transmitting audio/visual data to "*the first peripheral device*":

> Optional equipment can be cameras 39, 40, 41 for recording the progress of the meeting. These cameras can be linked by a network 51, e.g. a cable network to the router 42 and/or the base node 36. Another optional item is a microphone or microphones 38 that can be used to transfer audio, e.g. to the processing devices 31 and to loud speakers (not shown) attached to the base node 36 or part of the display 44.

Ex-1005, ¶120 (emphasis added); Ex-1002, ¶134. Beel also discloses the peripheral device receiving media content and displaying the media content on the display of the processing device:

> [A] peripheral device is provided for providing communication connectivity to a processing device which is provided with memory, **a display** and an operating system[.] [T]he peripheral device

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comprising a memory in which executable software code is stored for execution on the processing device, said executable software code comprising: … <u>a third software code portion for receiving media content from the network and for **displaying the media content on the display**</u> in accordance with a set of rules; wherein <u>the first software code portion is adapted to use the generic communication protocol for transferring the media content between the peripheral device and the processing device.</u>

Id., ¶71 (emphasis added); Ex-1002, ¶135. This media content presented on the display of the processing device can be, for example, audio/visual data presented by a different user or data from the cameras 39, 40, 41. *Id*., ¶¶118-21; *see also*, *id*., ¶¶50, 56, 75, 85, 88-89, 93, 126, 253-71, 298, 310-11. This discloses the well-known method of transferring video and audio bidirectionally from a conference call to one or more users' PCs (*i.e.*, "processing devices") connected to a conference online. Ex-1002, ¶136. This also almost verbatim discloses "*using the generic communications protocol for communication between the processing device and the first peripheral device*" ("use the generic communication protocol for transferring the media content between the peripheral device and the processing device" *id*., ¶71).

Dinka also discloses similar bidirectional online conferencing: "The client application is configured to allow a local user of the media appliance to participate in bidirectional communication sessions with other remote users via the network interface and packet-based network." Ex-1006, abstract; Ex-1002, ¶137. Dinka

likewise discloses a "client application 111" that can host "voice or video call[s] over the Internet 101." Ex-1006, 6:34-37; Ex-1002, ¶137. Dinka uses bidirectional communication between remote users using the user's computer terminals' "webcam 112," which would be a "functional device." Ex-1006, 6:12-13; Ex-1002, ¶137. Therefore, similar to Beel, Dinka uses bidirectional communication of "data … from the functional device" to communicate between user devices over the Internet. Ex-1002, ¶137.

It would have been obvious to a POSA to combine Beel's system of bidirectional communication using a peripheral device and base unit/node with Dinka's system utilizing user devices' webcams and client application 110 for bidirectional communication of video calls. Ex-1002, ¶138.

h) *wherein the processing device is adapted to host a unified communication between two or more processing devices.*

Beel discloses,

> the present invention provides an electronic meeting tool for
> communicating arbitrary media content between different users 37
> (with their own processing devices 31, e.g. PC, mobile phone, or
> tablet) and one display or projector or multiple displays or projectors
> 44 in the meeting room 30.

Ex-1005, ¶122; *see also id*., abstract, ¶¶13, 44, 50, 56, 71, 75, 87-88, 113, 119, 122, 126, 253-58, 298, 310-11; Ex-1002, ¶139. This conforms with the '972 patent's disclosure of unified communication:

Unified Communications system or tools can make use of video conferencing cloud service including a video conferencing node to allow one or more users located at the first video conferencing endpoint to communicate with one or more users located at the second video conferencing endpoint in a video conference.

Ex-1001, 7:8-13; Ex-1002, ¶140.

Beel expressly defines the "*processing device*" as a "*host*": "Each of the processing devices 31 can be a host device." *Id*., ¶117; *see also*, ¶¶142, 196, 221; Ex-1002, ¶141. This discloses the well-known method of transferring video and audio bidirectionally from a conference call to one or more users' PCs (*i.e.*, "processing devices") connected to a conference online. Ex-1002, ¶141.

Dinka also discloses similar bidirectional online conferencing: "The client application is configured to allow a local user of the media appliance to participate in bidirectional communication sessions with other remote users via the network interface and packet-based network." Ex-1006, abstract; *see also* § IX.A.2.g (client application 111); Ex-1002, ¶142. Therefore, the combination of Beel's disclosure of remote participants and the well-known idea of remote computer conferencing technology renders obvious the allegedly inventive "*unified communication*," such as Dinka's Skype conference. Ex-1002, ¶143.

3. Claims 2 and 10

> a) *The system of claim 1 wherein the functional device is any one or more of a microphone, a speakerphone, a speaker,*

> **a display, a touchscreen, a projector, a camera, a video camera, a webcamera.**

Beel discloses a "*functional device*," including "*a microphone*" (Ex-1005, ¶120), "*a speakerphone*" (¶118 ("Audio equipment 46 may be provided, e.g. a telephone that allows other members of the meeting to call in from remote destinations")), "*a speaker*" (¶¶120, 315 ("physical audio device in the base unit")), "*a display*" (¶¶119, 120), "a projector" (¶¶40, 119, 122, 123), and "*a camera, a video camera, or a webcamera*" (¶¶119-21). Ex-1002, ¶¶144-145, 167; *see also* § IX.A.2.a above.

4. Claims 3 and 11

> a) **The system of claim 1 wherein the at least one fixed or a configurable endpoint of the functional device exposed on the first peripheral device is one of a human interface device, a mass storage device, a composite device, a microphone, a speakerphone, a speaker, a display, a touchscreen, a projector, a camera, a video camera, or a webcamera.**

As discussed above, USB devices have endpoints. *See* § IX.A.2.f. Beel's disclosure of microphones, cameras, speakers, and displays can be understood as endpoints when exposed or made available on the first peripheral device. Ex-1005, ¶¶43, 50, 119-121, 313-317; Ex-1002, ¶146; *see also* Ex-1001, FIG. 4; *see also* § V (discussing USB endpoints). Beel's disclosure of endpoints conforms with the '972 patent's disclosure that both the "*functional device*" and the "*endpoint*" are associated with the same "second peripheral device" and the "*at least one fixed or a*

configurable endpoint…" means "a physical or virtual device that can act as a kind

of buffer." Ex-1002, ¶147. Accordingly, the "*at least one fixed or a configurable*

endpoint of the functional device exposed on the first peripheral device" may be one

of the functional devices disclosed by Beel, as described above for dependent claim

2. *See* § IX.A.3.a above; Ex-1002, ¶¶147-148, 168.

5. Claims 4 and 12

> **a) The system of claim 1 further comprising means for encoding, optionally encrypting the data.**

Beel discloses this limitation verbatim:

> The system of claim 100 further comprising means for
> encoding, optionally encrypting the audio data.

Ex-1005, claim 101; *see also* ¶¶67, 70, 162, 314, 315, 319, 320, 323 and claim 90;

Ex-1002, ¶149, 169.

6. Claims 5 and 13

> **a) The system of claim 1 wherein the first peripheral device is adapted to present a functional device to the unified communication between two or more processing devices.**

Beel discloses,

> [T]he present invention provides an electronic meeting tool for
> communicating arbitrary media content between different users 37
> (with their own processing devices 31, e.g. PC, mobile phone, or
> tablet) and one display or projector or multiple displays or projectors
> 44 in the meeting room 30.

Ex-1005, ¶122; *see also id*., abstract, ¶¶13, 44, 87-89, 113, 253-58. The received

"media content" can be, for example, audio/visual data generated by other

participants in the meeting or data from the cameras 39, 40, 41. *Id*., ¶¶118-21; *see*

also, *id*., ¶¶50, 56, 71, 75, 85, 88-89, 93, 126, 253-71, 298, 310-11; Ex-1002, ¶150.

This discloses the well-known method of transferring video and audio

bidirectionally between one or more users' PCs (*i.e.*, "processing devices"),

including data received from "*a functional device*," *e.g.*, microphones, loudspeakers,

or cameras, in the meeting room. Ex-1002, ¶¶150, 170.

Dinka also discloses that "client applications 111 and/or 113 … establish a

voice or video call over the Internet 101." Ex-1006, 6:34-37. Dinka also recognizes

that "[m]ost computer terminals 102 preferably also comprise a webcam 112," (*i.e.,*

a "functional device"). Ex-1006, 6:12-13. Therefore, Dinka discloses bidirectional

communication of "data … from the functional device" over the Internet and

between user devices. Ex-1002, ¶151; *see also*, § IX.A.2.g-h (presenting Dinka's

webcam (*i.e.*, "*functional device*") to the unified communication).

7. Claims 6 and 14

    a) ***The system of claim 1 adapted to expose the same type of functional device to the processing device as is connected to the Base Unit further comprising at least one driver for the functional device installed on the processing device.***

Beel discloses exposing a composite USB device to transmit audio/visual call

information to one or more functional devices to create an audio/visual output. Beel

discloses that the peripheral device can act as a composite USB. Ex-1002, ¶152. In

this scenario, it is able to transfer audio/data streams between the processing device

and functional device:

> The peripheral device preferably acts as a composite device
> comprising for instance a (virtual) audio speaker device. However
> instead of operating like a speaker the audio is channeled over the
> communications network. The peripheral device can preferably
> capture the audio stream with a device driver, for instance a built in
> ALSA UAC1, and stream the audio to the base unit.

Ex-1005, ¶317; Ex-1002, ¶152. Beel further discloses that the audio functional

device is "*connected to the Base Unit*" to play the audio stream received from the

peripheral device, the "*same type of functional device*" (*e.g.*, an audio device in this

example) is exposed to the processing device:

> With reference to the audio data on the processing device 31
> such as a client PC, the audio is sent over a port using generic drivers
> such as over a USB port 8 using the <u>standard built-in generic audio
> driver such as UAC driver 7</u> … This information is then…transferred
> to the communications network … On the base unit 33 the audio
> information stream is recovered at a suitable communications
> interface such as the WiFi access point 22. The audio is then
> unpacked in an unpacker 23, decoded in a decoder 24 before being
> before being offered to an audio mixer 28.

Ex-1005, ¶323 (emphasis added); *see also id*. ¶¶43, 312, 319 and Fig. 11; Ex-1002,

¶153. The UAC driver 7 corresponds to a "*driver for the functional device installed*

on the processing device." Ex-1002, ¶154. Therefore, the USB Audio Class (UAC)

driver is "the same type of functional device as is connected to the Base Unit," *e.g.*,

a speaker device. Ex-1002, ¶¶155, 171.

8. Claim 7

a) The system of claim 1 wherein the functional device is a second peripheral device.

Beel discloses "*the functional device is a second peripheral device*":

> The base node 36 may also be a processing device or host
> computer and may be coupled to a second connection unit 49 that
> provides access to the network 50 thus linking all of the processing
> devices 31, 36 together.

Ex-1005, ¶118. The base node 36 may be a peripheral, such as a display. *Id.*, ¶251;

see also ¶¶120 (cameras linked by cable network to the base node), 126, 129 and

Fig. 1A; Ex-1002, ¶156.

9. Claim 8

a) The system of claim 1 wherein the functional device is a data capturing device.

Beel discloses "*functional device[s]*" that can include microphones and

cameras, each of which capture data and is therefore a data capturing device. *See*,

e.g., Ex-1005, ¶¶119-21 and Fig. 1A; *see also* § IX.A.3.a above; Ex-1002, ¶157-158.

10. Claim 9

    a) A method for connecting a processing device to a functional device connected to or in a base unit of a communications network,

See claim 1, § IX.A.2.a above; Ex-1002, ¶159.

    b) the processing device having a memory, a display and an operating system,

See claim 1, § IX.A.2.b above; Ex-1002, ¶160.

    c) the base unit having a transmitter and

See claim 1, § IX.A.2.d above; Ex-1002, ¶161.

    d) the first peripheral device having a receiver

See claim 1, § IX.A.2.e above; Ex-1002, ¶162.

    e) the method comprising: coupling a first peripheral device to the processing device via a generic communications protocol,

See claim 1, § IX.A.2.c above; Ex-1002, ¶163.

    f) providing at least one fixed or a configurable endpoint, where the at least one fixed or a configurable endpoint is a data source or a data sink which is able to store or emit data, of the functional device exposed or made available on the first peripheral device;

See claim 1, § IX.A.2.f above; Ex-1002, ¶164.

    g) transmitting data from the base unit and receiving the data at the first peripheral device over the communications network from the functional device to the processing device via the at least one fixed or configurable endpoint using the generic communications protocol for communication between the processing device and the first peripheral device,

See claim 1, § IX.A.2.g above; Ex-1002, ¶165.

> ### h) *further comprising hosting a unified communication between two or more processing devices on the processing device.*

See claim 1, § IX.A.2.h above; Ex-1002, ¶166.

11. Claim 15

> ### a) *A peripheral device adapted to be coupled to a processing device via a generic communications protocol,*

See claim 1, § IX.A.2.c above; Ex-1002, ¶172.

> ### b) *the peripheral device having a receiver*

See claim 1, § IX.A.2.e above; Ex-1002, ¶173.

> ### c) *and at least one fixed or a configurable endpoint, where the at least one fixed or a configurable endpoint is a data source or a data sink which is able to store or emit data, of a functional device exposed or made available on the first peripheral device;*

See claim 1, § IX.A.2.f above; Ex-1002, ¶174.

> ### d) *the receiver of the first peripheral device being adapted to receive data over the communications network from the functional device and for sending the data to the processing device via the at least one fixed or configurable endpoint using the generic communications protocol for communication between the processing device and the peripheral device,*

See claim 1, § IX.A.2.g above; Ex-1002, ¶175.

> ### e) *wherein the peripheral device is configured to present the processing device to host a unified communication between two or more processing devices.*

See claim 1, § IX.A.2.h above; Ex-1002, ¶176.

12. Claim 16

> a) *The peripheral device of claim 15 wherein the at least one fixed or a configurable endpoint of the functional device exposed on the first peripheral device is one of a human interface device, a mass storage device, a composite device, a microphone, a speakerphone, a speaker, a display, a touchscreen, a projector, a camera, a video camera, or a webcamera.*

See claim 3, § IX.A.4 above; Ex-1002, ¶177.

13. Claim 17

> a) *A computer program product comprising a non-transitory signal storage means for storing computer program instructions that, when executed on a processor, carry out any of the methods steps of claim 9.*

See claim 9, § IX.A.10 above. Beel also discloses "Any of the above software code stored on a non-transitory storage medium." Ex-1005, ¶26; Ex-1002, ¶178.

14. Claim 18

> a) *The peripheral device of claim 15 wherein the at least one fixed or configurable endpoint has one transfer direction.*

Since bidirectional communication is possible, the endpoint has at least *one transfer direction*. Ex-1002, ¶179. Furthermore, to the extent that the claim requires only transferring data in one direction, the POSA would have understood that Beel's microphones only transmit data, while speakers and displays only receive data. Ex-1005, ¶¶43, 50, 56, 75, 93, 119-122, 126, 298, 310-11; Ex-1002, ¶179-181.

B. Claims 1-18 of the '972 Patent Are Unpatentable as Obvious Over the Combination of Kaplan, Van De Laar, and AAPA

1. Rationale to Combine

Both Kaplan and Van de Laar disclose systems of wirelessly presenting audio/visual content. Ex-1008, abstract, FIG. 2; Ex-1007, abstract, FIG. 1; Ex-1002, ¶182. Kaplan discloses presenting a content from a computer screen to a remote display device. Ex-1008, ¶26, FIG. 2; Ex-1002, ¶182. Van de Laar explains that the content can include information from a unified communications call, such as Skype. Ex-1007, ¶128; Ex-1002, ¶182. The POSA would have been motivated to modify the receiver 110 of Kaplan to have features of the WDH of Van De Laar to improve usability, allow use of multiple functional devices, in addition to the display of Kaplan, to access the functional device(s) in a unified communications call. Ex-1007, ¶9; Ex-1002, ¶182-83.

Furthermore, the '972 patent contains AAPA that Skype is a known way to perform the web conferencing disclosed by Kaplan. Ex-1001, 6:59-63, 7:66-8:21; *see also* Ex-1009 (showing Skype was available online in 2012); Ex-1007, ¶128; Ex-1002, ¶184. Therefore, the combination of Kaplan and Van de Laar would result in using Skype or similar prior art unified communication call software because Skype was a known technique to improve similar devices in the same way. Ex-1002, ¶184. The combination would create the predictable result of a web conferencing system using a unified communication call, such as Skype, wherein the system could utilize one or more functional devices' capabilities. Ex-1002, ¶184.

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Christison discloses a method of wirelessly connecting functional devices to personal computers via a wireless peripheral device. Ex-1012, abstract; Ex-1002, ¶185. A POSA would recognize that connecting wireless functional devices to computers was well known in the art, and that Christison teaches one efficient example of presenting wireless USB devices as "native devices." Ex-1012, 6:13-19. Ex-1002, ¶185. Kaplan teaches connecting remote functional devices to a client computer. Ex-1008, Abstract, ¶¶2-6, 16-17, 44, FIG. 2; Ex-1002, ¶185.

Christison teaches one way of effecting Kaplan's virtual devices by presenting a wireless USB device as "native." Ex-1012, abstract; Ex-1002, ¶185. Kaplan, Van de Laar, and Christison could have been combined by using Christison's known technique of presenting a remote device as native to improve or suggest one way for Kaplan to implement its disclosed functional devices. Ex-1002, ¶186. The combination would create the predictable result of a unified communication system (*e.g.*, Skype call) that used USB protocols to present remote functional devices as local or "native" functional devices. Ex-1002, ¶186.

2. Claim 1

a) *A system for connecting a processing device to a functional device connected to or in a base unit of a communications network,*

Kaplan discloses a "*system for connecting a processing device*" ("computer 220") *to a functional device* ("display device 210") "*connected to or in a base unit*"

("receiver 110") "*of a communications network.*" *See*, *e.g.*, Ex-1008, Abstract, ¶¶2-6, 16-17 ("[T]he transmitter 120 includes a wireless transceiver 450 that is operable to transmit data from the computer to the receiver 110. For example, the data may include video and audio data for display on the display device."), 18, 28 ("[V]ideo footage may be transmitted from the computer 220 through the transmitter 120 to the receiver 110 and then displayed on the display device 210"), 44, FIG. 2 (reproduced below); Ex-1002, ¶187.
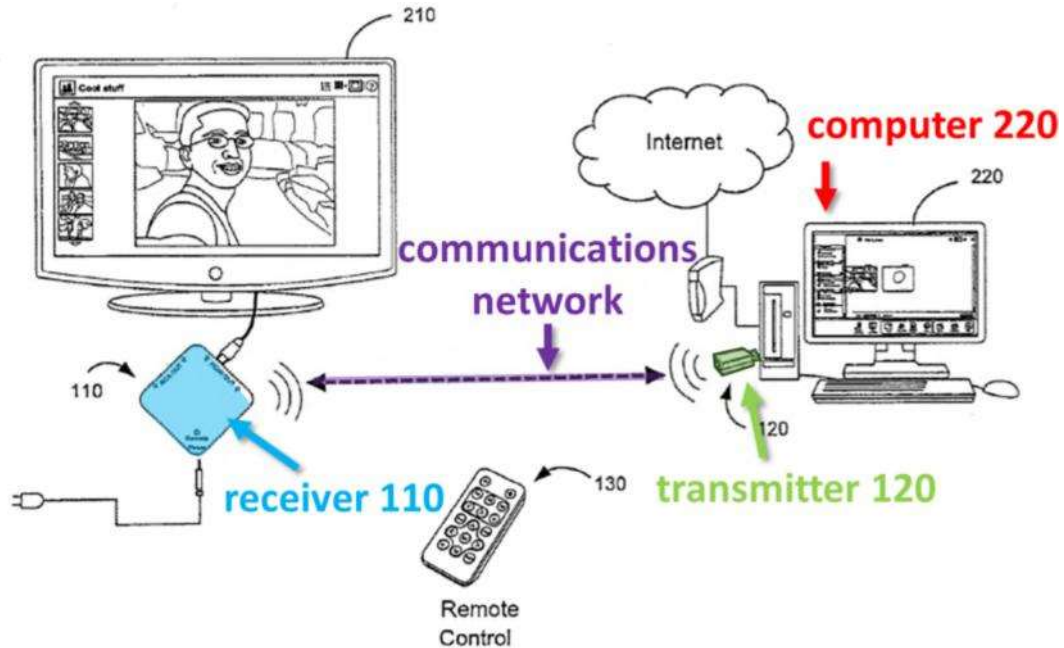

Ex-1008, FIG. 2.

Kaplan also describes "the receiver 110 as a network element" "*of a communications network*" established between the transmitter 120 and receiver 110. Ex-1008, ¶23; *see also*, *id*. ¶31 ("the communications channel between the transmitter 120 and the receiver 110 is provided in accordance with commercially

available wireless communications standards"); Ex-1002, ¶188. The '972 patent defines examples of "*functional device[s]*" to include cameras, microphones, speakers, and displays. Ex-1001, claim 2; Ex-1002, ¶189. As such, Kaplan's display 210 is a "*functional device*" connected to the "*base unit*." Ex-1002, ¶190.

b) the processing device having a memory, a display and an operating system,

Kaplan discloses the computer "*having a memory, a display*" (as illustrated in FIG. 2 above), "*and an operating system*," such as Windows®. *See*, *e.g.*, Ex-1008, ¶¶47-49, 59, FIG. 2; Ex-1002, ¶191.

c) the system comprising: a first peripheral device being adapted to be coupled to the processing device via a generic communications protocol,

Kaplan discloses a "*first peripheral device*" ("transmitter 120") couple to Kaplan's computer 220 "*via a generic communications protocol*" (a standard USB communications protocol "compliant with the Universal Serial Bus (USB) standard"). Ex-1008, ¶17; *see also*, *id*., ¶¶45 ("The ubiquity of the USB standard and the availability of USB ports, either on the computer or on a USB extender connected to the computer, make the use of a USB connection a suitable connector"), 58 ("The method 600 also includes establishing a connection between a transmitter and a computer (612)"); Ex-1002, ¶192.

Further disclosed is "a data connector configured to couple the transmitter unit to the computing device" (Ex-1008, claim 10) and that "the data connector

comprises a Universal Serial Bus (USB) data connector." Ex-1008, claim 11. *See also*, Ex-1002, ¶193-94.

d) the base unit having a transmitter and

Kaplan discloses its receiver 110, the base unit, has a transceiver 350. Ex-1008, ¶¶42 ("The transceiver 350 is operable to provide two-way communications with a matched transceiver in the transmitter 120"), 6 ("The receiver includes a first wireless transceiver"), 16, FIG. 3; Ex-1002, ¶195-96.

e) the first peripheral device having a receiver and

Kaplan discloses its transmitter 120, first peripheral device, has a transceiver 450. Ex-1008, ¶¶45 ("The transmitter 120 also includes transceiver 450 and antenna 452, providing for two-way communications with the receiver 110 paired with the transmitter 120"),19 ("[T]he transmitter 120 includes a wireless transceiver 450 that is operable to transmit data from the computer to the receiver 110"), 16-17, FIG. 4; Ex-1002, ¶197.

Kaplan and the '972 patent disclose similar peripheral devices, "a USB dongle" Ex-1008, ¶¶17, 58; Ex-1001, 7:56-57 and 9:10-22; Ex-1002, ¶198-99. The figures also illustrate similar dongles:
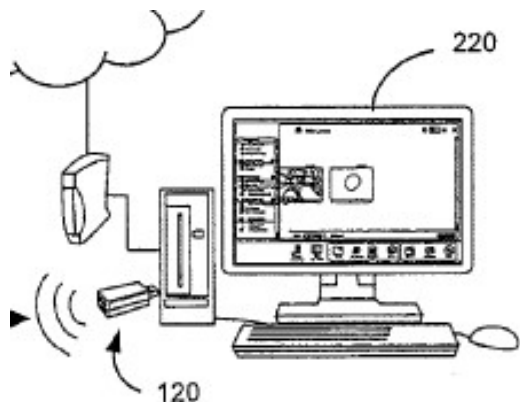
Ex-1008, FIG. 2 (transmitter 120)
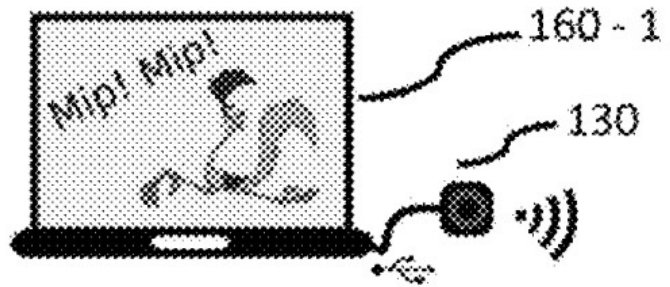
Ex-1001, FIG. 5 (peripheral device 130)

> ***f)*** **at least one fixed or a configurable endpoint, where the at least one fixed or a configurable endpoint is a data source or a data sink which is able to store or emit data, of the functional device exposed or made available on the first peripheral device;**

Kaplan discloses both the "*peripheral device*" and the "*functional device*" having an "*endpoint.*" Ex-1002, ¶200. First, Kaplan discloses the "*the first peripheral device having … at least one fixed or a configurable endpoint.*" Ex-1008, ¶¶46, 50-52. These endpoints are either "*fixed*" (*e.g.*, the presented mass storage device) or "*configurable*" (*e.g.*, the presented transmitter device). Ex-1002, ¶200. Kaplan also discloses an "*endpoint*" … *of the functional device*," *e.g.*, display 210 connected to the receiver 110. *Id.*, ¶¶21-22, 28-34, claim 14, FIG. 2; Ex-1002, ¶200. The "*endpoint*" is either "*fixed*" or "*configurable*" because it would either obviously be configured or fixed to be able to provide display functions to receive/display data. Ex-1002, ¶200. Therefore, Kaplan discloses the "*endpoint*" irrespective of whether it must be on the "*peripheral device*" or "*functional device*," which the claim does not recite clearly. Ex-1002, ¶200.

Kaplan further explains that the "*the at least one fixed or a configurable endpoint is a data source or a data sink which is able to store … data, of the functional device exposed or made available on the first peripheral device*":

> The transmitter initially operates in a first mode associated with a mass storage device. Thus, when the transmitter is connected to the computer, for example, by plugging the USB connector of the transmitter into a USB port on the computer, the transmitter appears or is registered as a mass storage device in the operating system.

Ex-1008, ¶59.

> The method further includes transmitting the video content from the transmitter to the receiver while operating in the second mode (618). The second mode of operation continues while the transmitter is connected to the computer.

Ex-1008, ¶61; *see also*, *id*. ¶8; Ex-1002, ¶201. Kaplan's endpoints allow the "*functional device*" to be "*exposed or made available on the first peripheral device*," *i.e.*, display data transmitted to or from the endpoint on the peripheral device. *Id*., ¶¶5, 6, 8, 16-17, 22, 57, claims 1, 10, 14, FIG. 2; Ex-1002, ¶202. Accordingly, the transmitter 120 of Kaplan has a transmitter device or endpoint able to *store or emit data*, such as video data *of the functional device* (display 210). Ex-1002, ¶202.

Van De Laar provides further details of an endpoint acting as a "*data source or data sink which is able to store or emit data of the functional device*":

The primary dockee will function as a [Wi-Fi Miracast] WFM <u>source</u> and the [wireless docking host] WDH as both a WFM <u>sink and source</u>. In order to allow the secondary dockee(s) to function as a WFM sink the WDH should forward the WFM packets in broadcast mode.

Ex-1007, ¶126 (emphasis added); *see also*, *id*. ¶123-125, FIG. 3 (reproduced below); Ex-1002, ¶203.
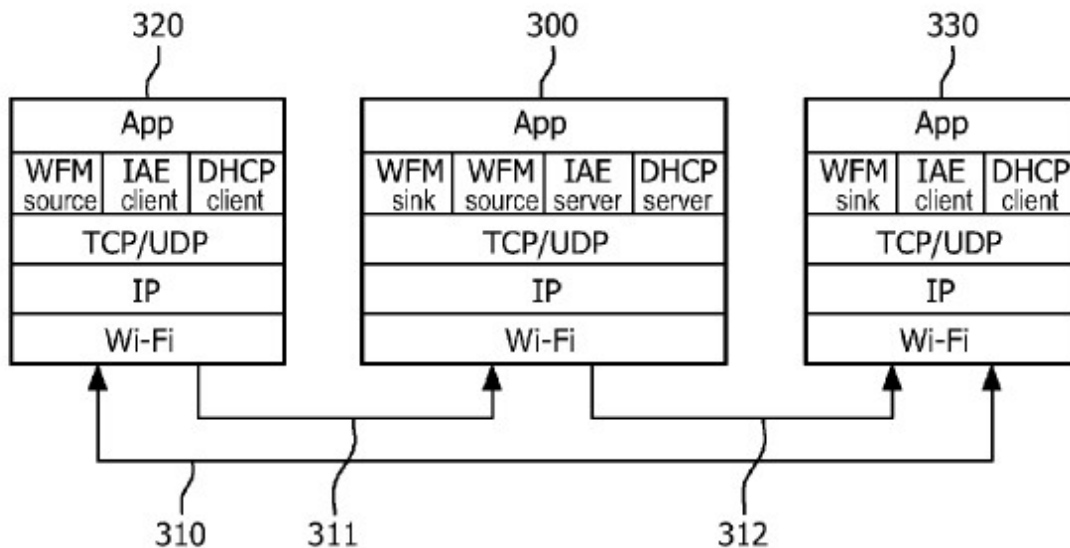

FIG. 3

Ex-1007, FIG. 3

Furthermore, Van De Laar also discloses a "*functional device exposed or made available*":

[V]arious dockees receive different sets of peripheral functions that can be accessed. In particular, the host, e.g. a PC, <u>may make</u>

available to dockee shared peripherals as well as exclusive

peripherals.

Ex-1007, ¶106 (emphasis added); Ex-1002, ¶204. *See also*, *id*. ¶¶82 ("Primary

dockee devices will have direct access to the peripheral functions offered by the

WDH"), 92 ("The multiple dockees are connected simultaneously to the WDH, the

WDH managing a set of wired and/or wireless peripherals and provides dockees

access to these peripherals" (emphasis added)), 93 ("Moreover, the A/V output may

be offered to a secondary dockee through a simulated peripheral (e.g. simulated

webcam) that would appear to the dockee as if it were a normal peripheral"

(emphasis added)), and ¶¶140-50.

To the extent the Patent Owner argues that "*exposed or made available*"

means something narrow, such as "configuring one or more endpoints with

descriptor fields" as the related European Patent No. EP3732827B1 recites after

amendments (Ex-1012), Petitioner relies optionally on Christison, which renders

obvious configuring descriptor fields, which every USB device has. Ex-1011, 6:66-

7:5; Ex-1002, ¶205-06. Christison claims,

> intercept a device descriptor request from said first wireless
> USB enabled device;
> read a device descriptor from said wired USB enabled device;
> modify said device descriptor so that it is consistent with a
> device descriptor for any wireless USB enabled device as specified by
> a predetermined wireless USB standard; and

> present said wired USB enabled device as said native wireless
> USB enabled device by providing said modified device descriptor to
> said first wireless USB enabled device.

Id., 9:21-32, 9:36-38; Ex-1002, ¶207. Therefore, to the extent that the Kaplan-Van de Laar combination does not disclose a narrower, unsupported construction of "*exposed*," the additional combination with Christison does. Ex-1002, ¶208.

> **g) the base unit and the first peripheral device being adapted to transmit and receive data respectively over the communications network from the functional device to the processing device via the at least one fixed or configurable endpoint using the generic communications protocol for communication between the processing device and the first peripheral device,**

The Kaplan-Van de Laar combination disclose this limitation. Kaplan discloses that "two-way communication is established between the receiver 110 and the transmitter 120." Ex-1008, ¶28; *see also*, *id.*, FIG. 2 (showing two-way communication between "*the peripheral device*" (transmitter 120) and *the base unit* (receiver 110)); Ex-1002, ¶209. Kaplan also discloses,

> The receiver 110, which may be a transceiver, includes the
> ability to both <u>transmit and to receive data</u> from a matched transceiver
> (i.e., transmitter 120)

Ex-1008, ¶16 (emphasis added); and

> The transmitter 120, which may also be a transceiver, includes
> the ability to both <u>transmit and receive data</u> from a matched
> transceiver (i.e., receiver 110).

Ex-1008, ¶17 (emphasis added).

As such, Kaplan discloses the well-known method of transferring data bidirectionally between devices connected via a communications network. Ex-1002, ¶210. Furthermore, Kaplan specifically discloses that data transmission is possible in both directions. *See id.*, ¶39 ("It should be noted that communications both downstream (i.e., transmitter to receiver) and <u>upstream (i.e., receiver to transmitter) are provided</u> by embodiments of the present invention" (emphasis added)); Ex-1002, ¶210.

Kaplan further discloses that this two-way communication is achieved *via the at least one fixed or configurable endpoint using the generic communications protocol for communication between the processing device and the first peripheral device.*" Ex-1002, ¶211. Data transmission through endpoints of USB devices is part of the USB standard. Ex-1002, ¶211. Further, Kaplan explains that generic USB communications protocols, such as those associated with the mass storage USB endpoints of the transmitter 120, allow *communication between the processing device* (computer 220) *and the first peripheral device* (transmitter 120):

> Thus, when the transmitter is connected to the computer, for example, by plugging the USB connector of the transmitter into a USB port on the computer, the transmitter appears or is registered as a mass storage device in the operating system. In some embodiments, software stored on the memory of the transmitter can be uploaded and

installed on the computer while the transmitter is operating in the first

mode (614).

Ex-1008, ¶59 (emphasis added); Ex-1002, ¶211.

Van De Laar also discloses "*transmit*[*ting*] *and receiv*[ing] *data respectively over the communications network from the functional device to the processing device*":

> [T]he WDH device is further configured to create and provide a video and/or audio stream representing the video and/or audio output that is sent by primary dockees to the one or more display and/or audio peripherals. This allows all dockees (primary and secondary) to monitor the merged display output and/or audio output and follow the presentation on their own screen and/or headphones. This is … useful to get better visibility and control over the screen for users of other primary dockees who may wish to simultaneously share the screen in order to collaborate.

Ex-1007, ¶96; Ex-1002, ¶212; *see also*, *id*., ¶¶55 ("[T]he primary dockee gets access to a display, whereas the secondary dockee is enabled to monitor the output on the display by receiving a video data stream of a peripheral similar to a camera function"), 103 ("the dockee device rendering the respective stream being received on its screen and/or audio output devices. This allows all dockees (primary and secondary) to monitor the merged display output and/or audio output and follow the presentation on their own screen and/or headphones").

> ***h)*** ***wherein the processing device is adapted to host a unified communication between two or more processing devices.***

See § VII.B.4 (definition of "unified communication"). Accordingly, "*host*[ing] *a unified communication between two or more processing devices*" means hosting an audio or audio-visual communication. Ex-1002, ¶213.

Van De Laar discloses:

> [T]he WDH may enable primary dockees to provide output to the WDH and/or its audio peripherals through an audio stream between the dockee and the WDH. This may be based on WSB Audio, Wi-Fi Direct Play Service, VoIP, XMPP, <u>Skype</u>, DLNA or other audio streaming mechanism.

Ex-1007, ¶128 (emphasis added); Ex-1002, ¶214.

Van De Laar also discloses:

> The system includes a <u>host device</u> 100 for wireless communication with multiple dockee devices 120,130,140, for example mobile phones, laptops or tablet computers.

Ex-1007, ¶74 (emphasis added); Ex-1002, ¶215; *see also*, *id*., ¶60 ("the docking processor may be arranged for accommodating direct communication between two dockee devices, for example to enable an exchange of questions and answers, or data….Furthermore, the docking processor may be arranged for assigning multiple dockee devices to a group and accommodating direct communication between dockee devices of the group."), 75-76, 120, 124, 166-167).

3. Claims 2 and 10

> a) *The system of claim 1 wherein the functional device is any one or more of a microphone, a speakerphone, a speaker, a display, a touchscreen, a projector, a camera, a video camera, a webcamera.*

Kaplan discloses a display device 210 which is connected to the receiver 110. *See*, *e.g.*, Ex-1008, Abstract, ¶¶2-6, 16-18, 28, 44, FIG. 2; Ex-1002, ¶216.

Van de Laar also discloses "peripherals," which can include, for example, "wireless mice, keyboards, display devices, audio devices, webcams, printers, storage devices, USB hubs." Ex-1007, ¶73; *see also*, *id*., ¶¶62; Ex-1002, ¶¶217, 233.

4. Claims 3 and 11

> a) *The system of claim 1 wherein the at least one fixed or a configurable endpoint of the functional device exposed on the first peripheral device is one of a human interface device, a mass storage device, a composite device, a microphone, a speakerphone, a speaker, a display, a touchscreen, a projector, a camera, a video camera, or a webcamera.*

See VII.B.6 (definition of "fixed or a configurable endpoint"). Kaplan discloses such a data source or sink as, for example, display 210. *See*, *e.g.*, Ex-1008, Abstract, ¶¶2-6, 16-18, 28, 44, FIG. 2; Ex-1002, ¶218. Van Der Laar similarly discloses peripherals that include "wireless mice, keyboards, display devices, audio devices, webcams, printers, storage devices, USB hubs," which are, or include, data sources or sinks. Ex-1007, ¶73; Ex-1002, ¶¶218, 234.

5. Claims 4 and 12

a) *The system of claim 1 further comprising means for encoding, optionally encrypting the data.*

Kaplan discloses means for encoding the data:

> [T]he receiver 110 may have significant computing resources. Video processing, buffering, storage, and the like may be performed in the receiver.

Ex-1008, ¶27; *see also*, *id*. ¶32, 48 (regarding "codecs"); Ex-1002, ¶219. *Encoding is a form of data processing*, as disclosed by Kaplan. Ex-1002, ¶219. Furthermore, Kaplan teaches that data may optionally be secured by "*encrypting the data*." *Id*., ¶54 and claims 6, 7, 13; Ex-1002, ¶¶219, 235.

Van De Laar also discloses, "the read access may be to the original, full resolution AV data, or to a modified, e.g. scaled and/or <u>transcoded</u>, representation of the primary AV data." Ex-1007, ¶56 (emphasis added). It also discloses that communication over the WiFi connection can use standard secure connection, *i.e.*, encrypted communication. *Id*., ¶¶118; *see also*, Ex-1002, ¶220. This secure connection provides a "secure direct link between the two devices." *Id.*; *see also*, Ex-1002, ¶220.

6. Claims 5 and 13

a) *Claim 5: The system of claim 1 wherein the first peripheral device is adapted to present a functional device to the unified communication between two or more processing devices.*

Van De Laar discloses,

> [T]he docking processor may be arranged for <u>accommodating</u> <u>direct communication between two dockee devices</u>, for example to enable an exchange of questions and answers, or data. Such direct communication may be applied to enable messaging as a user function. Furthermore, the docking processor may be arranged for assigning multiple dockee devices to a group and accommodating direct communication between dockee devices of the group. Within such group, all members are now enabled to communicate.

Ex-1007, ¶60 (emphasis added); Ex-1002, ¶¶221, 236; *see also*, ¶56 (docking processor provides the primary and/or secondary dockee devices access to the peripheral devices), 74-76, 120, 124, 128, 166-167.

7.   Claims 6 and 14

> ### a)   *The system of claim 1 adapted to expose the same type of functional device to the processing device as is connected to the Base Unit further comprising at least one driver for the functional device installed on the processing device.*

Van de Laar discloses a system for connecting remote devices to a host computer. Ex-1002, ¶222. For example, "A/V output may be offered to a secondary dockee through a simulated peripheral (e.g. simulated webcam) that would appear to the dockee as if it were a normal peripheral." Ex-1007, ¶93. The simulated webcam appears to the dockee "as a real peripheral (e.g. USB webcam)." Ex-1007, ¶54; Ex-1002, ¶222. It would have been obvious to the POSA that the connection uses a driver because it was well-known in the art and a POSA would have

recognized that a driver is a necessary component to provide electronic communication between devices ("*functional device*" and "*processing device*"). Ex-1007, ¶¶123-126, FIG. 3; Ex-1002, ¶¶222, 237. Furthermore, Christison's disclosure complements and details using drivers in the same way to provide communication between devices. Ex-1012, 3:66-4:51; Ex-1002, ¶222.

8. Claim 7

a) The system of claim 1 wherein the functional device is a second peripheral device.

Van De Laar discloses wireless communication between dockee devices and *functional device[s]*, which are referred to as "peripheral devices" or "peripherals." *See*, *e.g.*, Ex-1007, Abstract, ¶¶1, 8-9, 62, 73, 160; Ex-1002, ¶223. The '972 patent states that the "*second peripheral device*" can be a "camera, [or] display" (Ex-1001, 11:11-14) while Van de Laar discloses that its peripherals devices can be "display devices, audio devices, webcams" Ex-1007, ¶73; Ex-1002, ¶223.

9. Claim 8

a) The system of claim 1 wherein the functional device is a data capturing device.

Van De Laar discloses "*functional device[s]*" that can include ""wireless mice, keyboards…audio devices, webcams…and USB hubs" (Ex-1007, ¶73), each of which capture data and is therefore a *data capturing device*. *Id.*, *see also id.*, FIG. 1; Ex-1002, ¶224; § IX.B.3 above.

10. Claim 9

a) ***A method for connecting a processing device to a functional device connected to or in a base unit of a communications network,***

See claim 1, § IX.B.2.a above; Ex-1002, ¶225.

b) ***the processing device having a memory, a display and an operating system,***

See claim 1, § IX.B.2.b above; Ex-1002, ¶226.

c) ***the base unit having a transmitter and***

See claim 1, § IX.B.2.d above; Ex-1002, ¶227.

d) ***the first peripheral device having a receiver***

See claim 1, § IX.B.2.e above; Ex-1002, ¶228.

e) ***the method comprising: coupling a first peripheral device to the processing device via a generic communications protocol,***

See claim 1, § IX.B.2.c above; Ex-1002, ¶229.

f) ***providing at least one fixed or a configurable endpoint, where the at least one fixed or a configurable endpoint is a data source or a data sink which is able to store or emit data, of the functional device exposed or made available on the first peripheral device;***

See claim 1, § IX.B.2.f above; Ex-1002, ¶230.

g) ***transmitting data from the base unit and receiving the data at the first peripheral device over the communications network from the functional device to the processing device via the at least one fixed or configurable endpoint using the generic communications protocol for communication between the processing device and the first peripheral device,***

See claim 1, § IX.B.2.g above; Ex-1002, ¶231.

> **h) further comprising hosting a unified communication between two or more processing devices on the processing device.**

See claim 1, § IX.B.2.h above; Ex-1002, ¶232.

11. Claim 15

> **a) A peripheral device adapted to be coupled to a processing device via a generic communications protocol,**

See claim 1, § IX.B.2.c above; Ex-1002, ¶238.

> **b) the peripheral device having a receiver**

See claim 1, § IX.B.2.e above; Ex-1002, ¶239.

> **c) and at least one fixed or a configurable endpoint, where the at least one fixed or a configurable endpoint is a data source or a data sink which is able to store or emit data, of a functional device exposed or made available on the first peripheral device;**

See claim 1, § IX.B.2.f above; Ex-1002, ¶240.

> **d) the receiver of the first peripheral device being adapted to receive data over the communications network from the functional device and for sending the data to the processing device via the at least one fixed or configurable endpoint using the generic communications protocol for communication between the processing device and the peripheral device,**

See claim 1, § IX.B.2.g above; Ex-1002, ¶241.

> **e) wherein the peripheral device is configured to present the processing device to host a unified communication between two or more processing devices.**

See claim 1, § IX.B.2.h above; Ex-1002, ¶242.

12. Claim 16

a) ***The peripheral device of claim 15 wherein the at least one fixed or a configurable endpoint of the functional device exposed on the first peripheral device is one of a human interface device, a mass storage device, a composite device, a microphone, a speakerphone, a speaker, a display, a touchscreen, a projector, a camera, a video camera, or a webcamera.***

See claim 3, § IX.B.4 above; Ex-1002, ¶243.

13. Claim 17

a) ***A computer program product comprising a non-transitory signal storage means for storing computer program instructions that, when executed on a processor, carry out any of the methods steps of claim 9.***

See claim 9, § IX.B.10 above. Kaplan discloses a "*computer program product comprising a non-transitory signal storage means for storing computer program instructions that, when executed on a processor, carry out … methods steps*":

> Various embodiments of the invention may be implemented as a program product for use with a computer system. The program(s) of the program product define functions of the embodiments (including the methods described herein) and can be contained on a variety of computer-read able storage media. Illustrative computer-readable storage media include, but are not limited to: (i) non-writable storage media (e.g., read-only memory devices within a computer such as CD-ROM disks readable by a CD-ROM drive, flash memory, ROM chips or any type of solid-state non-volatile semiconductor memory) on which information is permanently stored; and (ii) writable storage media (e.g., floppy disks within a diskette drive or hard-disk drive or

any type of solid-state random-access semiconductor memory) on
which alterable information is stored.

Ex-1008, ¶64; Ex-1002, ¶244.

Van De Laar also discloses,

> For this purpose, according to a further aspect of the invention,
> the computer program product as described in the opening paragraph
> comprises a program that is operative to cause a processor to perform
> any one of the methods as described above.

Ex-1007, ¶51; Ex-1002, ¶245.

14. Claim 18

> #### a) *The peripheral device of claim 15 wherein the at least one fixed or configurable endpoint has one transfer direction.*

See claim 1, § IX.B.2.g above (regarding "bidirectional communication").
Since bidirectional communication is possible, the endpoint has at least "*one transfer direction.*" Ex-1002, ¶246. Furthermore, to the extent that the claim requires only transferring data in one direction, the POSA would have understood that Kaplan's microphones only transmit data, while speakers and displays only receive data. Ex-1008, ¶39; *see also* Ex-1007, ¶¶55, 96, 103; Ex-1002, ¶246. Further, a POSA would recognize and understand that USB endpoints include "*one transfer direction*" because the "stream pipes" for USB data transfer "are always uni-directional in their communication flow." Ex-1002, ¶247.

X. THE BOARD SHOULD NOT EXERCISE ITS DISCRETION TO DENY INSTITUTION 35 USC. § 314(A)

The *Fintiv* analysis is inapplicable, and the Board should not exercise its

§ 314(a) discretion.

XI. THE PROPOSED GROUNDS ARE NOT SUBSTANTIALLY THE SAME AS PREVIOUSLY CONSIDERED ART OR ARGUMENTS 35 U.S.C. § 325(D)

The Board considers the two-part *Advanced Bionics* test for discretionary

denial under § 325(d): (1) whether the same or substantially the same art was

previously presented to the Office, and if so (2) whether Petitioner has demonstrated

that the Examiner erred in a manner material to the patentability of the challenged

claims. *Advanced Bionics, LLC, v. Med-El Elektromedizinische Gerate GMBH*,

IPR2019-01469, Paper 6, 8-11 (PTAB Feb. 13, 2020) (precedential); *Nokia of*

America Corporation v. Alexander Soto, IPR2023-00680, Paper 32, 4 (PTAB Dec.

3, 2024) (Director reversing Board on *Advanced Bionics*).

A. The Petition's Asserted Prior Art and Arguments Are Not Substantially the Same to that Evaluated During Prosecution

During examination, the Examiner discussed only three prior art references,

Brands, Leete III, and Christison. Petitioner does not rely on Brands and Leete. The

Petition relies minimally on Christison and adds new prior art to show that unified

communication (*e.g.*, Skype (Ex-1001,2:30-31, 13:49-55, 19:52-55)) was well

known. Ex-1007, ¶128; Ex-1006 (INID-73). Additionally, Patent Owner commonly

owns Beel, Brands, and the '972 patent, which all have different inventive entities

but are remarkably similar and include much of the same disclosure. Beel also includes more expansive disclosure than Brands and the '972 patent admits that PCT publication of Beel "can be used in embodiments of the present invention." Ex-1001, 4:28-33.

Furthermore, Petitioner relies on new references, including Dinka, Van der Laar, and Kaplan. Importantly, none were evaluated or cited during prosecution of the '668 Application, and each is materially different from the evaluated prior art. Thus, the Petition presents different and non-cumulative prior art than was presented to the Examiner, as detailed in herein. Further, the grounds above present a "compelling merits" for institution. *CommScope Techs. LLC v. Dali Wireless, Inc.*, IPR2022-01242, Paper 23 (PTAB Feb. 27, 2023) (precedential).

1. The Office Never Considered Beel or Dinka on the Record

In its first asserted ground of unpatentability, Petitioner relies on Beel combined with Dinka. Beel was cited during prosecution but was never evaluated. See Ex-1004. The Board has consistently found that when a reference is not the basis of rejection, but is only cited in an IDS, it weighs "strongly against" exercising discretionary denial. *See*, *e.g.*, *CODE200, UAB v. Bright Data Ltd.*, IPR2022-00353, Paper 8, 10 (PTAB July 1, 2022). The record does not demonstrate the extent to which the Examiner considered Beel alone or in combination with Dinka, as asserted in this Petition and applied to the challenged claims. Further, Dinka was not

presented to the Office or otherwise discussed during prosecution of the '668

Application and is materially different from the evaluated prior art.

The examiner did reject the claims based on Brands, which shares disclosure

with Beel, as does the '972 patent, but Beel includes materially different disclosure

addressing what Patent Owner argued Brands lacked. For example, the applicant

argued that "no endpoints are needed" in Brands (Ex-1004, 317) but admits that FIG.

11 of Beel includes endpoints. Ex-1001, 4:28-3 and 16:51-56 (discussing endpoints

in FIG. 4 of the '972 Patent, which is the same as Beel's FIG. 11). Thus, the only

discussion of Beel on the record were in admissions that it "shows an arrangement

of components that can be used in embodiments of the present invention." Ex-1001,

4:28-28.

2.   The Office Never Considered Van de Laar or Kaplan

Petitioner also relies on Kaplan combined with Van der Laar . Neither

reference was presented to the Office or otherwise discussed during the prosecution

of the '972 patent and each is materially different from the evaluated prior art. The

combination of Kaplan and Van de Laar include additional disclosure of "*endpoints*"

and a "*Unified Communication Call*." *See* § IX.B.2 (f), (h). Therefore, Kaplan and

Van de Laar are new and materially different, meaning discretionary denial is

unwarranted.

B.   The Examiner Erred in a Manner Material to the Patentability of the '972 Patent During Examination

The examiner materially erred by overlooking specific, relevant references, including Dinka, Van der Laar, and Kaplan. As described in this Petition, these references disclose elements of the challenged claims, including the element the Examiner thought allowable. Their disclosures, in combinations as described in this Petition, render the '972 patent's claims obvious. Thus, this error reflects a significant gap in the Examiner's evaluation of art and arguments as it pertains to the processing device hosting a unified communication between processing devices.

Similarly, the Examiner erred in not appreciating the disclosure in Beel regarding the unified communication between processing devices that renders the claims of the '972 patent obvious. Interestingly, the Examiner only issued rejections based on 35 U.S.C. 102, but did not evaluate any combination of art. Beel was cited in an IDS during prosecution, but not used in a rejection. As described above, Beel discloses the limitations the Examiner found allowable. But the Examiner did not appreciate Beel's disclosure, as evidenced by their failure to address the reference in any office action or in a Reasons for Allowance. *See Apple Inc. v. Seven Networks, LLC*, IPR2020-00285, Paper 10, 28-31 (PTAB July 28, 2020) (granting institution because the Examiner did not provide a reason for allowance that addressed the art or arguments presented in an IPR petition and listed in an IDS).

Thus, the Examiner materially erred during examination of the '972 patent by overlooking multiple relevant references and, further, by not fully considering Beel, which led to the '972 patent's allowance.

Beel also includes substantial additional disclosure explaining how to use "a virtual audio device," which the '972 patent admits is a type of endpoint. Ex-1005, ¶313-17; Ex-1001, 7:64-8:3. Therefore, Patent Owner's admissions about Beel's additional disclosure demonstrates that the examiner materially erred in not rejecting the issued claims as obvious over Beel.

During the Final Rejection, the Examiner asserted that the prior art allegedly did not disclose, and therefore was allowable, claims 4, 5, 13, and 14. These claims related to "means for encoding, optionally encrypting the data" (claims 4 and 13), and "the processing device is adapted to host a unified communication between two or more further processing devices" (claims 5 and 14).[1] Ex-1004, 310-311, 335. Patent Owner incorporated the subject matter of claims 5 and 14 into the independent claims to reach allowance. *Id.* However, Patent Owner did not provide any further arguments regarding this amendment.

The new ground of Beel combined with Dinka teaches exactly these limitations. A simple comparison shows that Petitioner's asserted art is materially

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[1] Claims 13-14 are variations of 4-5, respectively, related to method claims.

different than and non-cumulative of the art discussed during the prosecution because the asserted art discloses a processing device hosting unified communication between two or more processing devices, *i.e.*, "between different users 37 (with their own processing devices 31, e.g. PC, mobile phone, or tablet)." Ex-1005, ¶122. *See also* ¶¶87-89, 253-258. Beel also states that "[e]ach of the processing devices 31 can be a host device." *Id.*, ¶117; *see also* ¶¶88, 142, 196. *See also* Ex-1005, ¶¶67, 70, 162, 314, claims 91, 101 (encrypting data).

Further, Dinka discloses systems for a client application to allow a "local user of the media appliance to participate in multiparty communication sessions with multiple other remote users via the network." Ex-1006, 3:33-36; 4:23-26 ("processing apparatus coupled to the memory, network interface and video apparatus, and arranged to execute the communication client application"); 6:7-17 ("computer terminal 102 is installed with a communication client application 110 .... audio transceiver [with] a speaker and microphone ... [and] a webcam"; "television set 103 comprises an embedded processor and memory installed with a version of the communication client application 113"); 14:12-20; FIG. 1. *See also* 9:32-48 ("I/O layer further comprises a voice engine .... to encode those speech signals for transmission over the internet"); 9:51-64 ("client application 113 comprises a client engine .... client engine may also handle other functions such as ... encryption"). *See* Section X.A.2.

Thus, Dinka, its combination with Beel, nor Petitioner's arguments presented in this Petition were ever considered in determining the '972 patent's patentability and discretionary denial is unwarranted.

XII. CONCLUSION

For the reasons given above, Petitioners request cancelation of claims 1-18 of the '972 patent.

Dated: January 17, 2025

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Petition for Inter Partes Review totals 13,589 as counted by Word Count feature of Microsoft Word, which is less than 14,000 allowed under 37 C.F.R. § 42.24(a)(1)(i), excluding the parts of the paper exempted by 37 C.F.R. §42.24(a).

Dated: January 17, 2025   By: /Stephen Yang/
                                            Reg. No. 70,589
                                            Attorney for Petitioner

CERTIFICATE OF SERVICE

I hereby certify that on January 17, 2025, I caused a true and correct copy of

the foregoing Petition for *Inter Partes* Review of U.S. Patent No. 10,684,972 and

supporting exhibits to be served via Federal Express mail on the Patent Owner at the

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