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. 11,966,347
Filing Date: May 11, 2022
Issue Date: April 23, 2024
Title: Method and System for Making Functional Devices Available to Participants of Meetings

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Inter Partes Review No.: IPR2025-00598

PETITION FOR *INTER PARTES* REVIEW OF US PATENT NO. 11,966,347

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Ex-1004	File History of U.S. Patent No. 11,966,347
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Ex-1020	U.S. Patent Application Publication No. 2005/0210390 ("Ono")
Ex-1021	EP Patent Application Publication No. 2107463 ("Deforche")
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-1026	Imation Wireless Projection Link User Guide
Ex-1027	EZAir Press Release, "EZAir Wireless PC to TV Solutions Now Available Across Europe," March 16, 2011
Ex-1028	Warpia Product Brief, "Wireless USB PC to TV Audio/Video Display Adapter," 2009
Ex-1029	Q-Waves Product Overview, "Quicklink TV," November 2010
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II. INTRODUCTION

Petitioners request IPR of claims 1-31 of US patent no. 11,966,347 (Ex-1001, the "'347 patent") assigned to Barco NV ("Patent Owner"). The '347 patent discloses system for video conferencing where computers can connect to remote displays or speakers (*i.e.*, "*functional devices*") that is remarkably similar to earlier-filed patents.

For example Barco owns earlier-filed U.S. Patent Publication No. 2015/0169477 ("Beel," Ex-1005), which the '347 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.

Ex-1001, 5:47-52. The examiner used Beel minimally in its examination of the '347 patent, but overlooked key features. Furthermore, the examiner never considered Beel in combination with other references presented herein which, together, disclose all limitations of the challenged claims. The grounds below demonstrate a reasonable likelihood that claims 1-31 are unpatentable.

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 '347 patent is related to IPR2024-1436, 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 '347 patent is available for IPR, and Yealink is not barred or estopped from requesting IPR challenging the claims of the '347 patent.

V. PRECISE RELIEF REQUESTED

Ground 1: Claims 1-31, are obvious over Beel in view of Dinka, AAPA, and optionally Christison, under pre-AIA 35 U.S.C. § 103(a).

Ground 2: Claims 1-31 are obvious over Kaplan in view of Van de Laar, AAPA, and optionally Christison, under pre-AIA 35 U.S.C. § 103(a).

VI. THE '347 PATENT

A. Prosecution History Summary

The '347 patent issued from U.S. Application No. 17/742,166 ("the '166 Application"). Ex-1004, 30.

On May 9, 2023, the examiner issued a Non-Final Rejection based on a combination of "Brands" (U.S. Publication No. 2015/0121466) and "Christison" (U.S. Patent No. 7,761,627). Ex-1004, 424-34. Several dependent claims were rejected based on the combination of Brands, Christison, and "Beel" (U.S. Publication No. 2015/0169477). Ex-1002, ¶63.

The examiner found dependent claims 12, 14, and 26-28 allowable. Ex-1004, 433. Claims 12 and 26-27 recited:

> the base unit receives the second processed data, and decodes and/or enhances the second processed data and forwards it to a

> functional device which is connected or attached to the base unit through a serial connection

(the "Second Processed Data Limitation"). Claims 12 and 26-27 depended from claims which recited:

> wherein third video data, received from the host application and/or from the 3rd party application running on the processing device, is sent to an endpoint of the first peripheral device via a standard generic driver, the first peripheral device receiving the third video data and processing the third video data to form second processed video data.

(the "Third Video Data Limitation"). The examiner alleged Brands did not disclose "receiving second processed data, decoding/enhancing said data, and forwarding it to a function[al] device through a serial connection." Ex-1004, 433; Ex-1002, ¶64.

Claims 14 and 28 recited:

> the base unit being configured to expose and make available the functional device that is connected to the base unit, simultaneously with a plurality of first peripheral devices by interpreting, processing and translating the electronic signals coming from the functional device

(the "Translation Limitation"). The examiner did not specify how the Translation Limitation claims were allowable subject matter. Ex-1004, 433; Ex-1002, ¶65.

Barco amended independent claims (allowed claims 1 and 12) to additionally recite the Second Processed Data Limitation and the Third Video Data Limitation. Ex-1004, 504-05; Ex-1002, ¶66. Barco added new independent claim (allowed claim

23) which additionally recited the Second Processed Data Limitation, the Third Video Data Limitation, and the Translation Limitation, and second new independent claim (allowed claim 27) which additionally recited the Translation Limitation. Ex-1004, 504-510; Ex-1002, ¶66.

The examiner issued a Notice of Allowance on September 27, 2023, and the '347 patent issued on April 23, 2024. Ex-1004, 553, 681.

VII. LEGAL STANDARDS

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

In litigation of similar patents, Barco alleged that the 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. Ex-1002, ¶¶36-37.

B. Claim Construction

These claim constructions are limited to this Petition and the '347 patent and shall not be construed as admissions or constructions in any other proceeding, 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 '347 patent. The patents contain different specifications, prosecution histories, and claim limitations. Therefore, a POSA would not necessarily reach the same construction each proceeding. Ex-1002, ¶¶67-71.

1. "*host application*"

The '347 patent discloses: "a processing device 160 with a processor and memory and executing and optionally storing a client software 70 comprising also a host application." Ex-1001, 23:54-56. The "*host application*" does not define any functions, nor is it a term of art. Ex-1002, ¶72. The '347 patent also explains the processing device is a host. *See* Ex-1001, 9:13-14. Therefore, a "host application" is "an application running on the processing device." Ex-1002, ¶72.

2. "*exposed on the first peripheral device*"

The '347 patent states:

> 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.

Ex-1001, 9:16-20.

> "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., 10:21-23; *See* Ex-1002, ¶73.

"*Exposed*" is not a term of art. Ex-1002, ¶74. The specification explains that exposed means transferring data, *e.g.*, audio/visual data, between the peripheral device and the functional device. *See*, *e.g.*, *id.* 18:36-19:55. Accordingly, this

limitation means the endpoint is "capable to send/receive data on the first peripheral device." Ex-1002, ¶74.

3. "*functional device*"

The '347 patent defines the "*functional device*" as, "a second peripheral device connected in some way to a base unit." Ex-1001, 9:15-16. Petitioner therefore applies this construction. Ex-1002, ¶75-6.

4. "*at least one fixed or configurable endpoint*"

The '347 patent states:

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

Ex-1001, 9:23-29 (emphasis added). Ex-1002, ¶77. A buffer is a temporary storage for digital data that is moving from one place to another, such as a video buffer before it is decoded for presentation on a display. Ex-1002, ¶78.

"[F]*ixed*" or "*configurable*" endpoints are not commonly understood terms of art. Ex-1002, ¶79. The '347 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 160 and the base unit 100.

Ex-1001, 18:2-13. The context of the terms implies that the "*endpoint*" is either "*configurable*" or it's not, *i.e.*, it's "*fixed*." Ex-1002, ¶80. This limitation does not limit the claim because every device is either configurable or not configurable. Ex-1002, ¶80. 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, ¶80.

Accordingly, this limitation means "a data source or sink that is fixed or configurable and used to transfer data." Ex-1002, ¶81.

5. "*generic communications protocol*"

The '347 patent does not define a "*generic communications protocol*." Ex-1002, ¶82. However, generic communications protocol is used to couple and communicate between the processing device and the peripheral device. *See* Ex-1001, claim 1; Ex-1002, ¶82. The '347 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, 17:7-11. As shown in Figs. 1B and 1C, arrow 53 represents communication between the peripheral device 130 and the processing device 160. Ex-1002, ¶82.

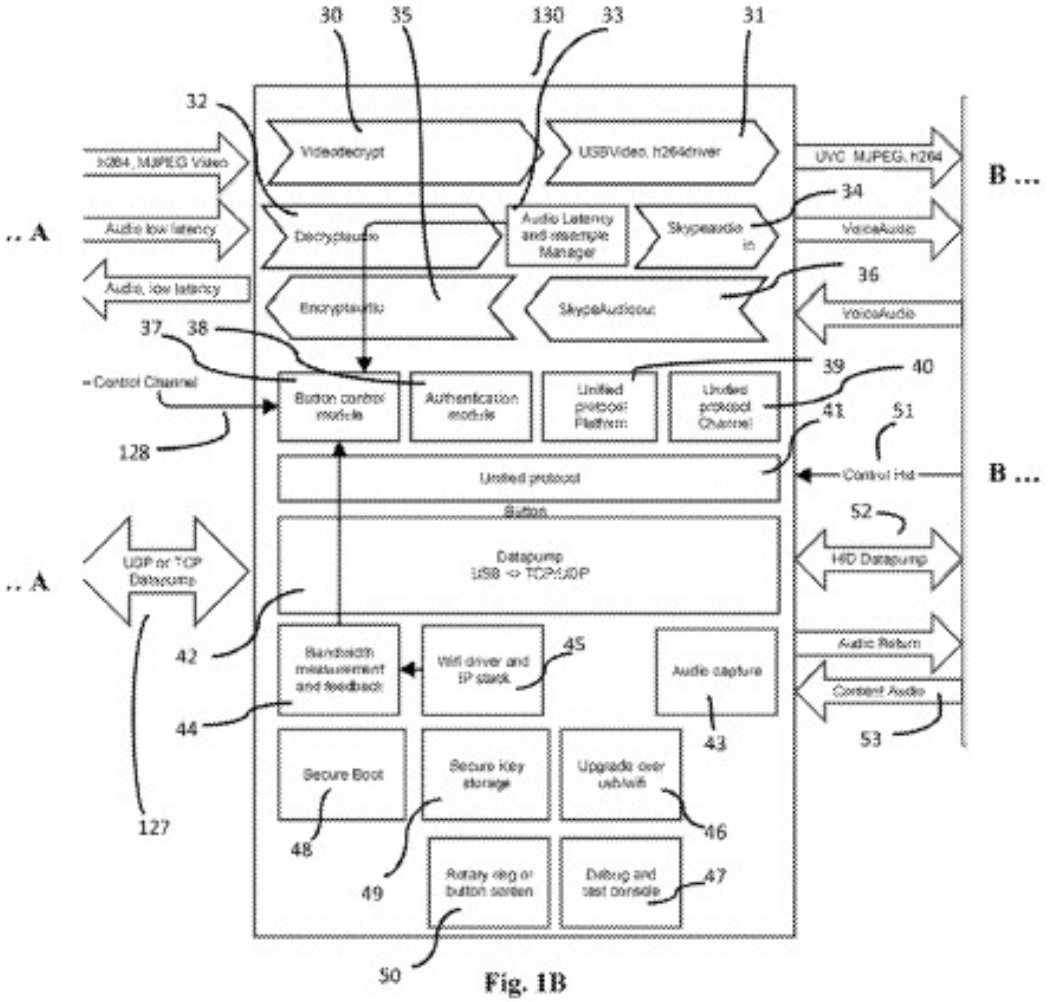


Fig. 1B

’347 patent, FIG. 1B

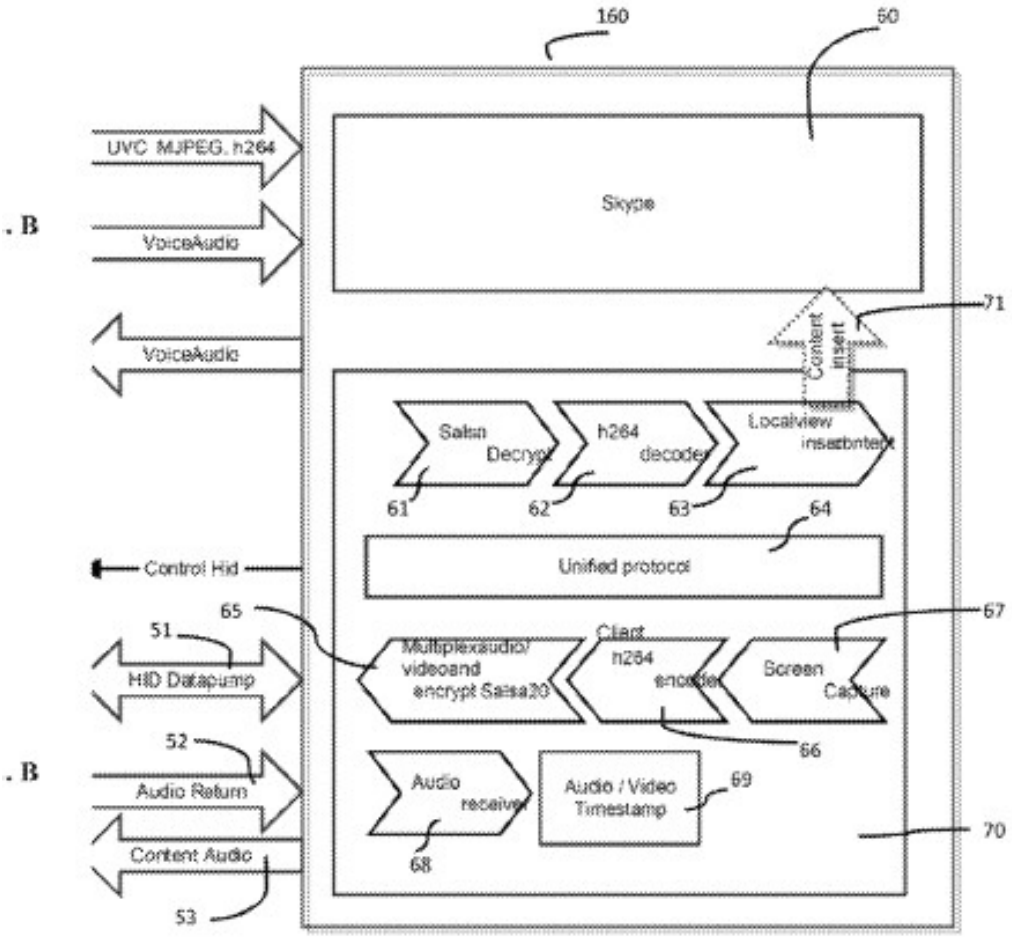


Fig. 1C

’347 patent, FIG. 1C

A protocol is a set of rules used by two modules or devices to communicate. Ex-1031; Ex-1002, ¶83. 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, ¶83.

6. “*Unified Communication*”

The ’347 patent defines “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, 8:12-16. Further, "processing devices ... shar[e] the Unified Communication (UC) call such as the Skype call or a Skype for Business call." Ex-1001, 19:18-21. Accordingly, this limitation means an "audio or audio/visual communication between two or more processing devices." Ex-1002, ¶84.

7. "*standard driver / generic driver*"

The '347 patent defines "pre-installed generic driver" as "a driver which is installed on a processing device such as a computer [sic] **as a standard driver**, e.g. is installed with the installation of the operating system." Ex-1001, 8:65-9:1 (emphasis added). Ex-1002, ¶85.

VIII. OVERVIEW OF PRIOR ART

A. Beel (Ex-1005)

Beel published on June 18, 2015, and is prior art under 35 U.S.C. § 102(a)(1). Beel was considered on the record during prosecution of the '346 patent but was used minimally as a secondary reference against certain dependent claims. Ex-1002, ¶86.

Beel discloses wirelessly communicating media content between an electronic device and a display via a peripheral device and base node. Ex-1005 (*See id.*, ¶¶40-41, claims 82-102). Beel describes its systems and methods in largely identical language to that of the '347 patent. Ex-1002, ¶87.

B. Dinka (Ex-1006)

Dinka published on February 2, 2013, and is prior art under § 102(a)(1). Dinka was not considered during prosecution. Ex-1002, ¶88.

Dinka is assigned to Skype (INID-73) and discloses communicating media content between multiple (remote) computer terminals and televisions via a network. Ex-1006, abstract, 1:12-15, 2:44-55. It 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, ¶89.

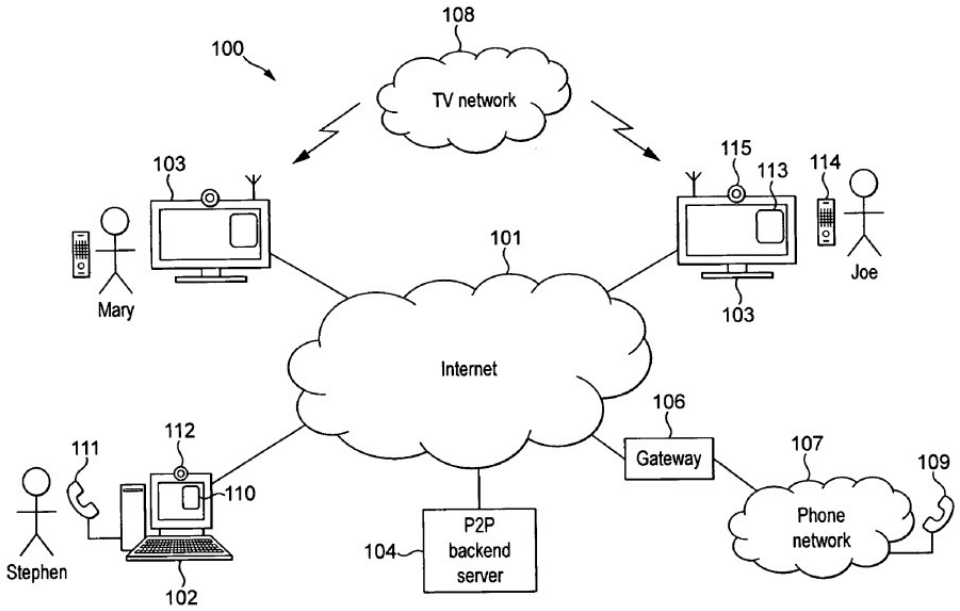


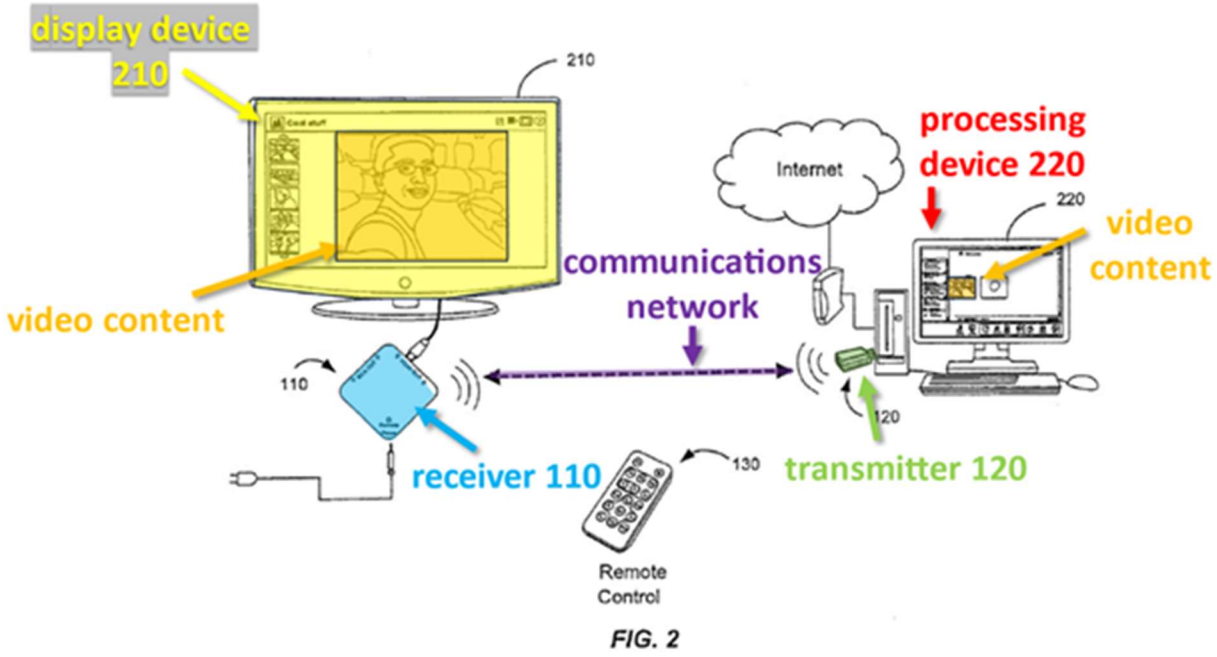
FIG. 1

Ex-1006

C. Kaplan (Ex-1008)

Kaplan published November 25, 2010, and is prior art under § 102(a)(1). Kaplan was not considered during prosecution. Ex-1002, ¶90.

Kaplan discloses transmitting video content between a computing device and display device. Ex-1008, abstract; Ex-1002, ¶91.. Kaplan describes a computer wirelessly connected to a display via a USB transmitter (Ex-1008, ¶¶16-18 and FIG. 2), wherein media is transmitted from computer to the display. Ex-1008, ¶28; Ex-1002, ¶92.



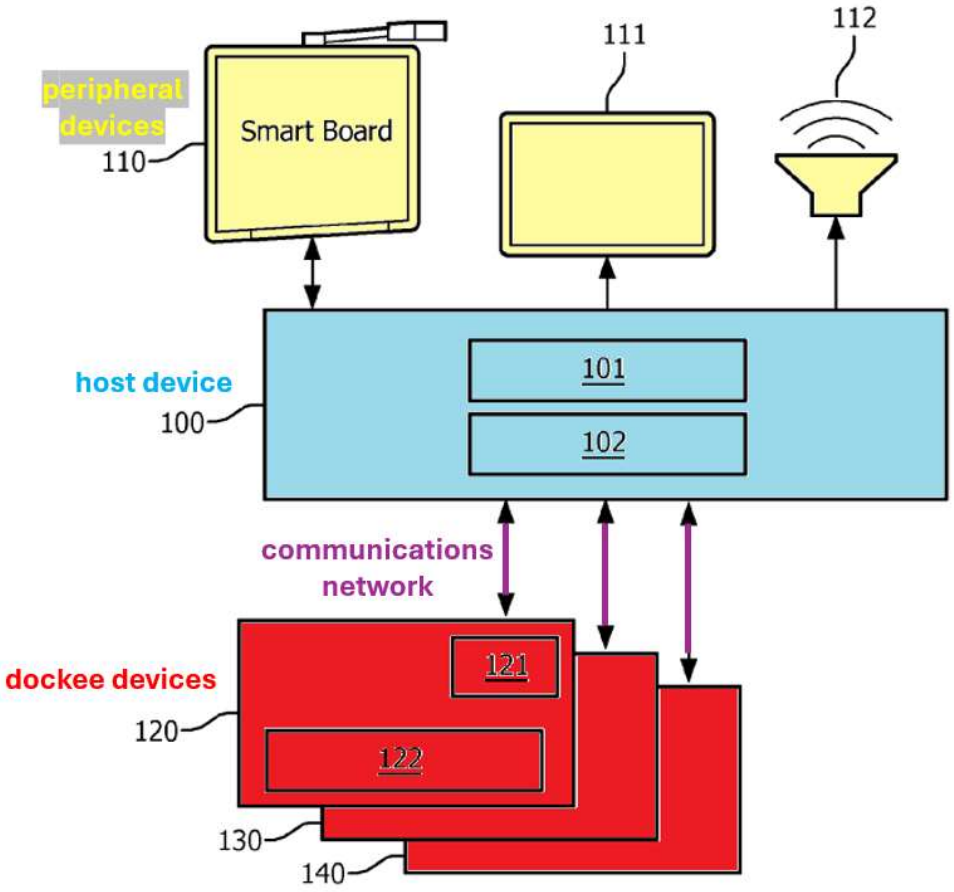
Ex-1008, FIG. 2

D. Van de Laar (Ex-1007)

Van de Laar published on June 18, 2015, and is prior art under § 102(a)(1). It was not considered during prosecution. Ex-1002, ¶93.

Van de Laar discloses connecting mobile devices such as laptops, "dockees," to one or more "peripheral[s] so as to control the peripheral[s]." Ex-1007, ¶55, 73-74, 80, 82; Ex-1002, ¶94. Communication from dockees to host device is via a

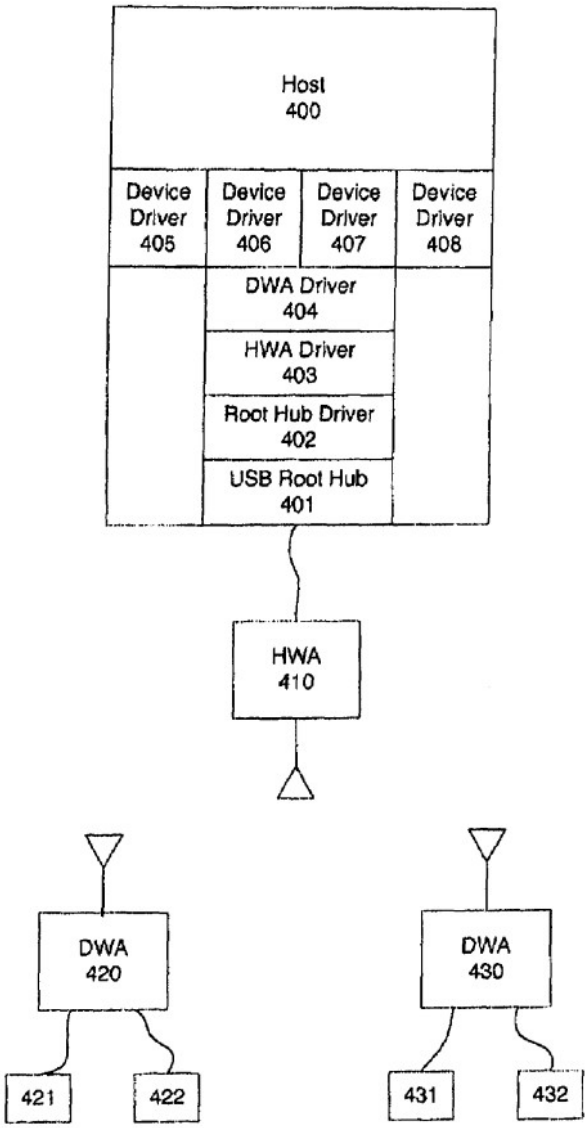
wireless communications network. The peripherals connected by wired connection, such as HDMI or USB. *Id.*, at ¶¶54, 74-76, 128; Ex-1002, ¶95.



Id. FIG. 1

E. Christison (Ex-1011)

Christison published on July 20, 2010, and is prior art under § 102 (a)(1). It was considered on the record but overcome with the Second Processed Data Limitation and Translation Limitation. Ex-1002, ¶96.



Ex-1011, FIG. 4.

Christison discloses a Host Wire Adapter 410 (HWA) and Device Wire Adapters 420/430 (DWA) for mimicking wired USB devices to appear as a wireless USB device (WUSB) to the PC. Ex-1011, 3:59-4:16. Christison configures USB descriptor fields to be compliant with the values for WUSB devices. *Id*., 6:66-7:5, 9:36-38; Ex-1002, ¶97. This allows Christison to present wireless USB devices as "native devices." *Id.*, 6:13-19; Ex-1002, ¶97.

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

The '347 patent admits that web conferencing tools, such as Skype, "can take over audio and/or visual data provided from a host processing device." Ex-1001, 8:12-16. Skype has been known since at least 2012, and has expanded to include many limitations presented in the '347 patent by at least 2015. Ex-1009; Ex-1013; *See* Ex-1002, ¶¶60-62, 98.

The '347 patent admits its FIG. 11 is identical to Beel's FIG. 11. Ex-1001, 5:47-52; Ex-1002, ¶99. The '347 patent further admits, that Beel's FIG. 11 discloses endpoints. Ex-1001, 18:4-9; Ex-1002, ¶100.

The '347 patent admits that drivers were well-known, standard means for controlling peripheral devices. Ex-1001, 8:65-9:12.

IX. THE GROUNDS UNPATENTABILITY

A. Claims 1-31 Are Obvious Over Beel in view of Dinka, AAPA, and Optionally Christison

1. Rationale to Combine

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, ¶101. Dinka is a patent directed to the commonly used Microsoft Skype platform (Ex-1006 (INID-73)), which is an example application for bidirectional unified communication calls, as defined by the '347 patent. Ex-1001, FIG. 1C, 3:11-19. Skype allows for group communication

calls and includes video sharing/streaming and the use of "screen sharing" to share a user's screen to another device. Ex-1013; Ex-1002, ¶101.

Beel similarly discloses "electronic meeting systems" and "web conferencing systems." Ex-1005, ¶¶85-89. The software need not be "zero footprint," but installed on the processing device. *Id*., ¶¶215-248; Ex-1002, ¶102.

Furthermore, the '347 patent contains AAPA that Skype and pre-installed generic drivers are known ways to perform the invention disclosed by Beel. Ex-1001, 8:12-33; *see also* Ex-1009 (Skype available in 2012); Ex-1002, ¶103. Therefore, motivated to improve similar systems in the same manner, a POSA would have been motivated to combine Beel and Dinka. Ex-1002, ¶103. The combination would result in using well-known and widely used Skype application for bidirectional unified communications to build on Beel's data sharing technology. Ex-1002, ¶103. This would create the predictable result of a bidirectional web conferencing system using a unified communication, wherein the system could utilize the functional devices. Ex-1002, ¶103.

A POSA would have recognized that connecting wireless functional devices to computers was well known, and that Christison teaches one efficient example by presenting wireless USB devices as "native devices." Ex-1011, 6:13-19; Ex-1002, ¶104. Christison teaches one way of effecting Beel's virtual devices by presenting a wireless USB device as "native." Ex-1011, abstract; Ex-1002, ¶104. 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, ¶104-05. This would create the predictable result of a bidirectional web conferencing system using USB protocols to present remote functional devices as local or "native" to host a unified communication, and utilize the capabilities of functional devices. Ex-1002, ¶105

2. Claims 1 and 12

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

Beel discloses this limitation. Ex-1005, claim 82; Ex-1002, ¶106, 153. Beel connects processing devices 31 to cameras, loudspeakers, and/or whiteboard connected to a base node 36 through a network 51:

> Optional equipment can be cameras 39, 40, 41 for recording the progress of the meeting. These cameras can be linked by a network 51, …[to] 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.

Ex-1005, ¶120 (emphasis added); *see also*, ¶¶40-41, 88, 93, 117, 118, 194-99, 225, 288, 319-23, 310, FIG. 1a and 1b. "*[F]unctional device[s]*" include "a microphone, a speakerphone, a speaker, a display, a touchscreen, a projector, a camera, a video camera, a webcamera." Ex-1001, 2:25-27; Ex-1002, ¶106.

b. ***the processing device having a memory, a display and an operating system, wherein the processing device hosts a host application,***

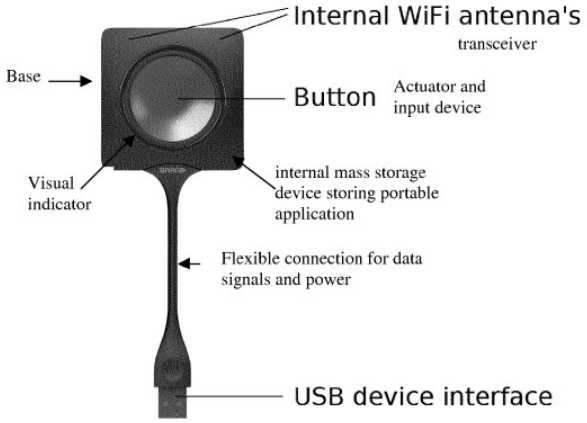
Beel discloses "the processing device having a memory, a display and an operating system with pre-installed generic drivers." Ex-1005, ¶¶41; Ex-1002, ¶107, 154; *see also id.*, ¶¶45, 56, 64, 68, 71, 94, 125, 196, 310, and claims 82 and 92.

Beel also defines that each "of the processing devices 31 can be a host device" such that processing device "*hosts a host application.*" *Id*., ¶117; Ex-1002, ¶108, 154; *see also* ¶¶142, 196, 221, FIG. 9.

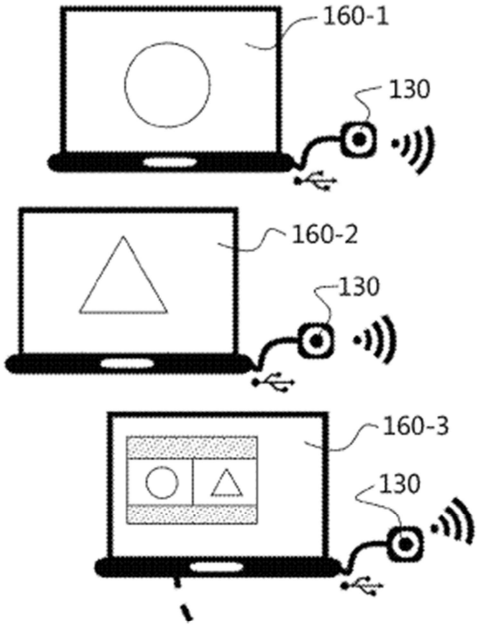
Beel discloses a "client application" and "screen scraping application," with the same apparent functionality as the "*host application*." *Id*., ¶¶51, 59, 247, 248; Ex-1001, 2:44-55; Ex-1002, ¶109, 154; *see* Ex-1035.

c. ***further comprising: a first peripheral device being configured to be coupled to the processing device via a generic communications protocol,***

Beel discloses "peripheral device comprising a connector adapted to couple to a port of a user processing device 31." Ex-1005, ¶125 (emphasis added); Ex-1002, ¶110-11, 155. Beel and the '347 patent disclose similar peripheral devices:



Ex-1005, FIG. 10



Ex-1001, FIG. 5 (peripheral device 130)

See Ex-1005, ¶¶54, 58, 195; Ex-1001, 9:13-14, 10:39-57.

Beel discloses communicative coupling:

> the processing device having…pre-installed generic driver providing a generic communications protocol for communication between processing device and a standard class of peripheral devices.

Ex-1005, ¶56 (emphasis added); Ex-1002, ¶112, 155.

d. *the base unit having a transmitter and*

Beel discloses:

> The base node 36 for communicating with the connection unit 47 has a receiver 63…. the transmitter/receiver can be a wireless transmitter/receiver.

Ex-1005, ¶129; Ex-1002, ¶113, 156; *see also id.*, ¶288.

e. *the first peripheral device having a receiver and*

Beel discloses:

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

Ex-1005, ¶128; Ex-1002, ¶114, 157; *see also id.*, ¶¶120, 125.

f. *at least one fixed or configurable endpoint of the functional device is exposed on the first peripheral device,*

Beel discloses "Mass storage device 12," "USB audio device 14," and "USB HID device 13." Ex-1005, FIG. 11, ¶¶320-23; Ex-1002, ¶115, 158. Indeed, the '347 patent discloses the same 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.

Ex-1001, 5:47-53; 18:4-9; Ex-1002, ¶115-16, 158; *compare* Ex-1001, FIG. 4 *with* Ex-1005, FIG. 11. These endpoints are either "*fixed*" (*e.g.*, a mass storage device) or "*configurable*" (*e.g.*, virtual audio device.) Ex-1005, ¶¶43, 50, 313-17 Ex-1002, ¶115-16; *see also* § VII.B.4. Further, it is well-known in the art that USB devices include "endpoints" to transfer data. Ex-1002, ¶45-47, 115-16, 158.

Beel discloses endpoints "*exposed on the first peripheral device*": *e.g.*, a virtual device to stream A/V data to/from the "*peripheral device*"(*See* § VII.B.2):

> The peripheral device preferably acts as a composite device comprising for instance a (virtual) audio speaker device.…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, ¶117, 158; *see also id*. ¶¶43, 132, 313-316 ("additional audio out interface displayed on the processing device display to which it can stream the audio.").

Beel's endpoints allow the "*functional device*," such as A/V components connected to the base unit, to be "*exposed 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 a "microphone or microphones 38 that can be used to transfer audio, e.g. to the processing devices 31") (emphasis added); Ex-1002, ¶118; *see also* ¶¶43, 50, 56, 75, 93, 119-122, 126, 298, 310-17. Accordingly, the peripheral device of Beel can have a composite device able to store and emit virtual audio/visual data to endpoints. Ex-1002, ¶118, 158.

To the extent Barco argues that "*exposed*" 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, 6:32-37; 6:66-7:5; 7:25-35; Ex-1002, ¶119, 158. 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; *see also id*., 9:36-38, claims 9, 13. 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, ¶119, 158.

g. *The method further comprising: the base unit being configured to transmit and the first peripheral device being configured to receive first processed video data over the communications network,*

See §§ IX.A.2.d-e ("configured to transmit"); Ex-1002, ¶120, 159.

Beel discloses "*receiv[ing] first processed video data over the communications network*": "[T]he peripheral device comprising…receiving media content from the network." Ex-1005, ¶71; Ex-1002, ¶121, 159; *see also id.*, ¶¶50, 56, 75, 88-89, 93, 118-122, 126, 128, 298, 310-11. Each of the peripheral devices

and the base unit display the same "*first processed video data*" because Beel supports "remote meeting participant[s]." Ex-1002, ¶121, 159.

See § IX.A.2.h ("*first processed video data*").

h. ***the functional device being configured for first video data to flow into the base unit or first video data is captured in the base unit, the first video data being processed in the base unit to generate the first processed video data, wherein the first processed video data is sent to the first peripheral device,***

Beel discloses that video data flows into the base unit (base node 36):

> cameras 39, 40, 41 for recording the progress of the meeting. These cameras can be linked [to] the base node 36.… a microphone or microphones 38 that can be used to transfer audio, e.g. to the processing devices 31 and to loud speakers.

Ex-1005, ¶120 (emphasis added); Ex-1002, ¶122, 160; *see also*, ¶¶41, 88, 310, FIGs. 1a and 1b.

Beel also discloses,

> A whiteboard 45…can be optionally coupled to the display 44 and/or the base node 36, e.g. when the whiteboard can record electronically what is written on it. Optionally, a camera 35 may be provided to record the entries on the whiteboard 45 [and] stored or transmitted to other networks via router 42.

Ex-1005, ¶119; Ex-1002, ¶123, 160. *See also* FIG. 1 (cameras 39, 40, 41 connected by network 51 to base node). Beel also explains how video data is processed by

encoding video data, including from the cameras 35, 39, 40, and 41. *Id*., ¶¶315-323; Ex-1002, ¶123. Beel discloses the "*the first processed video data is sent to the first peripheral device*." *See* Ex-1005, ¶¶71 ("third software code portion [of the peripheral device] for receiving media content from the network), 72 ("means for receiving, decrypting and decoding incoming arbitrary media content"); Ex-1002, ¶123, 160.

i. *the first peripheral device being configured to process the first processed video data received by the first peripheral device to generate second video data,*

See § IX.A.2.g. Beel describes the "*first processed video data*" can be processed: data is "On the peripheral device 32 the video packets are received,…unpacked in an unpacker 25, decoded in a decoder 26 and then inserted into a suitable composition such as an OpenGL based composition in the compositor 29 for display." *Id*., ¶322; Ex-1002, ¶124, 161; *see also id.*, ¶72 (*e.g.*, tenth video code, "eleventh code for providing a means for receiving, decrypting and decoding," twelfth video code). This is an obvious way that computer systems process video data "*to generate second video data*." Ex-1002, ¶124, 161.

j. *the first peripheral device being configured to make the second video data available through the at least one fixed or configurable endpoint of the first peripheral device,*

See § IX.A.2.f. Beel discloses the "*first peripheral device*" communicates "*second video data*" from cameras or microphones to "*the processing device*." Ex-

1005, ¶¶56 ("generic communications protocol for communication between processing device and…peripheral device"), 119-20; Ex-1002, ¶125, 162. As such, Beel is configured to "*make[s] the second video data available through the…endpoint of the first peripheral device*." Ex-1002, ¶125, 162.

k. ***the operating system of the processing device being configured to capture the second video data and to make it available through a custom or standard driver to either the host application or a 3rd party application running on the processing device or to other processing devices,***

To summarize, the base unit generates "*first processed video data*," received and processed by the peripheral device to generate "*second video data*," sent to the processing device and "*made available…to…the host application or 3rd party application*." Ex-1002, ¶122-26, 163. Beel discloses "interactive network-connect whited boards and videoconferencing appliances, are available for the benefit of those who share the same room as well as those who are in remote locations." Ex-1005, ¶5; Ex-1002, ¶126, 163; *see also*, ¶¶14, 71 ("third software code portion for receiving media content from the network), 72 ("means for receiving, decrypting and decoding"), 85, 119, FIG. 1 (cameras 39, 40, 41 connected by network 51 to base node).

According to the '347 patent, "a third party application 60…can be adapted to execute a unified communications call such as a Skype™ call or a Skype™ for business call." Ex-1001, 23:57-59; Ex-1002, ¶127, 163.

Beel discloses or suggests "*available through a custom or standard driver to either the…application running on the processing device*." Ex-1002, ¶128, 163. Beel discloses custom and standard drivers (*see*, *e.g.*, Ex-1005, ¶¶23, 25, 41-43, 79, 95, 137, 174, 187, 205, 221, 317-23) and web conferencing systems (*see*, *e.g.*, *id.*, ¶¶85-89, 252-53, 313), which would involve "*a 3rd party application*," such as Dinka's Skype™ application that could access the captured video or video otherwise presented on the processing device. Ex-1002, ¶128, 163.

Dinka explains how video data is made available to "*a 3rd party application*" (*e.g.*, through the video engine):

> The I/O layer further comprises a video engine comprising a video codec. The video engine is arranged to accept video signals from the webcam input 308, and to encode those video signals for transmission over the Internet 101.

Ex-1006, 9:40-45 Ex-1002, ¶129, 163; *see also*, Ex-1001, 8:12-33; Ex-1009.

It would have been obvious that the 3rd party application could be Dinka's Skype application to display video captured by Beel's camera attached to the base unit. Ex-1002, ¶129, 163.

l. ***wherein third video data, received from the host application and/or from the 3rd party application running on the processing device, is sent to an endpoint of the first peripheral device via a standard generic driver,***

See § IX.A.2.k.

Beel discloses capturing "*third video data, received from the host application*":

> That software 30 when executed on the processing device 31 captures the video data that is available on the processing device, e.g. from a presentation or video that is running on the processing device.

Ex-1005, ¶320; Ex-1002, ¶130, 164. Beel sends the data "*to an endpoint of the first peripheral device via a standard generic driver*":

> [T]he processing device [has]…at least one pre-installed generic driver providing a generic communications protocol for communication between processing device and a standard class of peripheral devices, the method comprising the steps of:…
>
> … transferring the screen scraped data between the processing device and the peripheral device.

Ex-1005, ¶56; Ex-1002, ¶130, 164; *see also*, *id*. ¶¶40-42, 50-51, 56 ("communications protocol" to transfer data between peripheral and processing device), 64, 66, 68, 70, 71, 73-74, 161, 205.

m. ***the first peripheral device receiving the third video data and processing the third video data to form second processed video data, and***

Beel discloses "transferring the media content between the processing device and the peripheral device," which includes "*receiving the third video data*." Ex-1005, ¶68; Ex-1002, ¶131, 165; s*ee also*, *id*. ¶¶41-42, 56, 64, 71, 73-74, 205, 321.

Beel also discloses:

> On the peripheral device 32 the video packets are received at the corresponding plug and play port, e.g. the USB port 11, read by the Human Interface Driver (HID) interface handler 13, unpacked to remove HID protocol headers in an unpacker 20 and then transmitted to the communications network.

Ex-1005, ¶321; Ex-1002, ¶132, 165. Removing HID protocol headers is a form of "*processing*" (video data packets without HID protocol headers)." Ex-1002, ¶132, 165.

Dinka discloses it was obvious that video signals are processed using enconding/decoding:

> The video engine is also arranged to decode video signals received over the Internet 101 via the network interface 302.

Ex-1006, 9:45-48; Ex-1002, ¶133, 165.

n. ***wherein the base unit receives the second processed [video] data, and decodes and/or enhances the second processed data and forwards it to a functional device [or second peripheral device][1] which is connected or attached to the base unit through a serial connection.***

Beel discloses that "*the base unit receives the second processed [video] data*":

---

[1] Claim 12 recites "second processed video data" and "forwards it to a functional device or a second peripheral device…." Claim 1 apparently mistakenly omitted the word "video."

> [A] base or display node 36…adapted to receive user selected arbitrary media content.

Ex-1005, ¶123; Ex-1002, ¶134, 166. *See also*, *id*., ¶¶67, 70, 139, 142, 144, 162, 169, 211, 316-17, 322, Fig. 11.

Beel also discloses "*the base unit…decodes … and forwards it to a functional device [or second peripheral device] is connected…through a serial connection*":

> to the base unit 33, the incoming stream is…unpacked in an unpacker 25, decoded in a decoder 26 and then inserted into a suitable composition…for display on a central display device.

Ex-1005, ¶322; Ex-1002, ¶135-36, 166; *see also*, *id*. ¶¶72, 119 ("The display node 36 is coupled to and adapted to allow display of media on some kind of display 44"), 155 ("receiving, decrypting and decoding"), 315 ("decrypt and decode…and deliver the resulting signal to the physical audio device in the base unit"), 322-23, Fig. 11 (decoders 24 and 26). *Id*., ¶23 ("Connecting a projector to a computer using the standard USB port hence might become commonplace."); Ex-1002, ¶43 (USB stands for Universal Serial Bus).

3. Claims 2 and 13

a. *The method of claim 1, wherein the first video data is interpreted and/or encoded in the base unit to form the first processed video data.*

Beel discloses: a "whiteboard 45 can…be optionally coupled to the display 44 and/or the base node 36" and a "camera 35 may be provided to record…the

whiteboard," which can be "stored or transmitted to other networks." Ex-1005, ¶119; Ex-1002, ¶137, 167. Beel discloses "encoding, compressing and optionally encrypting" data to send over a communications network. *See id.*, ¶¶ 67, 70-72. The "Base Node Software" includes code for "receiving, decrypting and decoding incoming arbitrary media content." *Id.*, ¶155; Ex-1002, ¶137, 167.

Further, to the extent Barco argues the disclosures are inadequate, a POSA would find it obvious to modify well-known technology to "move" the code for encoding/encrypting or decoding/decrypting from the peripheral device onto the base node with the Base Node Software. Ex-1002, ¶138, 167.

4. Claims 3 and 14

a. *The method of claim 2, wherein the first video data is enhanced, mixed, multiplexed, and/or encrypted in the base unit.*

See § IX.A.3.a. Beel discloses:

> [T]enth code for providing a means for auto-composing of different incoming arbitrary media streams and rendering of composited image on display.

Ex, 1005, ¶72 (emphasis added). Auto-composing different media streams is the same as "*mix*[*ing*]" or "*multiplex*[*ing*]." Ex-1002, ¶139, 168; *see also*, ¶¶314-18, 323 (discussing mixing audio and video).

5. Claims 4 and 15

a. ***The method of claim 2, wherein the first processed video data is received by the first peripheral device, and the first peripheral device is configured to decode and/or interpret the first processed video data and to generate the second video data.***

See § IX.A.2.g, 2.i.

Beel further discloses data being "unpacked to remove HID protocol headers in an unpacker 20." Ex-1005, ¶321; Ex-1002, ¶140-41, 169; *see also id.*, ¶72 ("decrypting and decoding").

6. Claims 5 and 16

a. ***The method of claim 4 wherein the first peripheral device demultiplexes, and/or decrypts, the first processed video data received by the first peripheral device to generate the second video data.***[2]

See §§ IX.A.2.i, 5.a; Ex-1002, ¶142, 170.

7. Claims 6 and 18

a. ***The method according to claim 4, wherein the first processed video data is sent to the first peripheral device through a wireless link.***[3]

---

[2] Claim 16 does not recite "*to generate the second video data*."

[3] Claim 18 recites "wherein the base unit is configured to transmit the first processed data."

See §§ IX.A.2.d-e, g. Beel discloses the peripheral device can "receive" media content that is "*sent to the first peripheral device*." *See* Ex-1005, ¶¶71, 117 (wireless network). Beel further teaches video data comes from "the base node to a remote user" having a peripheral device. *Id.*, ¶254; Ex-1002, ¶143, 175.

Further, to the extent Barco argues the disclosures of Beel are inadequate, a POSA would find it obvious to modify the well-known technology of sending data between devices to include bi-directional communications. *See* Ex-1006; Ex-1002, ¶144, 175.

8. Claims 7 and 19

a. *The method according to claim 1, wherein the first video data is for display on a display.*

Beel discloses: "content to be displayed on the central screen or display." Ex-1005, ¶¶53, 58, 314-15 (content includes "video streams"); Ex-1002, ¶145, 176.

9. Claims 8 and 20

a. *The method according to claim 1, wherein the 3rd party application is a hosted Unified Communication.*

Beel discloses, "*the 3rd party application* (*e.g.*, a client application) *is* [for hosting a] *Unified Communication*":

> 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.

Ex-1005, ¶122; *see also, id.*, abstract, ¶¶13, 44, 87-88, 113, 252-58; Ex-1002, ¶146, 177.

Dinka discloses the well-known Skype application used for "bidirectional communication sessions with other remote users" that could be used with Bee's conferencing system. Ex-1006, abstract, 2:51-55; Ex-1002, ¶147, 177. Dinka's "client application" is one obvious example of an application to run on Beel's system. Ex-1002, ¶147, 177.

10. Claim 9

a. *The method according to claim 1, wherein the third video data is enhanced, and/or encoded to form the second processed data and the second processed data is sent through a wireless link to the base unit.*

Beel discloses:

> [S]ixth code for providing a means for encoding, compressing and optionally encrypting the video frames and sending them over a secure link to the base node.

Ex-1005, ¶70 (emphasis added); Ex-1002, ¶148; *see also id.*, ¶¶117 ("wireless network"), 162.

11. Claim 10

a. *The method of claim 9, wherein the base unit decrypts the second processed data*.

See § IX.A.2.n; Ex-1002, ¶149-50.

12. Claims 11 and 22

a. *The method of claim 10, the base unit being configured to expose and make available the functional device that is connected to the base unit, simultaneously with a plurality of first peripheral devices by interpreting, processing and translating the electronic signals coming from the functional device.*

See § IX.A.2.f. Beel further discloses display 44 being "*expose[d] or [made] available, simultaneously with"* a plurality of connection units 47 in order to present A/V data from the processing devices 31 simultaneously. *See*, *e.g.*, Ex-1005, ¶54 ("central display or screen so that full real-time content that is provided by multiple meeting participants"), 139, 143, Figs. 1a, 1b, and 2 (simultaneous display from multiple processing devices); Ex-1002, ¶151, 179.

See § IX.A.3.a-4.a for disclosure of "*interpreting, processing and translating the electronic signals from the functional device*." Ex-1002, ¶152, 179.

13. Claims 17, 24, and 31

a. *The system according to claim 12, wherein the functional device is configured to be exposed natively on the first peripheral device.*

Beel discloses:

> This has the major advantage that no specific driver is required, since all these devices are natively supported in every personal computer system that has a USB port.

Ex-1005, ¶208 (emphasis added); Ex-1002, ¶171, 196, 214.

The ’347 does not define “*exposed natively*.” Ex-1002, ¶172, 196, 214. The ’347 patents suggests it means USB communication can be established without proprietary software or drivers:

> When a functional device, e.g. a second peripheral device is exposed natively or as a mimic of such a device in hardware, use can be made of endpoints such as USB endpoints on the first peripheral device or the user processing device which can expose the corresponding second peripheral devices such as USB devices connected to or plugged into the base unit (as is done in a hub), so no proprietary software or drivers need to be installed to support this.

Ex-1001, 12:21-29 (emphasis added); Ex-1002, ¶172, 196, 214.

Optionally, Christison discloses “Proxy WUSB [wireless USB] Hub 1000 takes advantage of this efficiency by presenting wired USB devices 1010, 1020 as if they are ‘native’ WUSB devices.” Ex-1011, 6:17-19. The USB devices attached to the WUSB Hub appear “as if they are native WUSB [wireless USB] devices,” *i.e.*, appears as if it were attached. Ex-1011, 6:25-26; Ex-1002, ¶173, 196, 214. *See additionally*, Ex-1011, 3:18-25, 6:32-58; Ex-1001, 9:16-20.

A POSA would find it obvious to combine Christison’s disclosure of remotely connecting a USB device as “native,” to instead connect the USB device as “native” on the peripheral device disclosed in Beel. Ex-1002, ¶174, 196, 214. A POSA would recognize the native device could “mimic” the functionality of Beel or Dinka’s

peripheral devices for use in bidirectional communications between multiple users. Ex-1002, ¶174, 196, 214.

14. Claims 21, 26, 29, and 30

a. ***The system of claim 12, wherein the base unit is configured to receive the second processed video data, and to decrypt [decode and/or enhance][4] the second processed video data and to subsequently forward it to a functional device or a second peripheral device which is connected or attached to the base unit through a serial connection.***

See §§ IX.A.2.n and IX.A.11.a; Ex-1002, ¶178, 198, 212, 213.

15. Claim 23

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

See § IX.A.2.a; Ex-1002, ¶180.

b. ***the processing device having a memory, a display and an operating system, wherein the processing device hosts a host application,***

See § IX.A.2.b; Ex-1002, ¶181.

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[4] Claim 26 recites "*second processed ~~video~~ data*" and "*~~to subsequently~~ forward<u>s</u> it to a functional device ~~or a second peripheral device~~ which is connected or attached*." Claim 26 and 29 recites "*~~decrypts~~ <u>decodes and/or enhances</u>*."

c. ***further comprising: a first peripheral device being configured to be coupled to the processing device via a generic communications protocol,***

See § IX.A.2.c; Ex-1002, ¶182.

d. ***the base unit having a transmitter and***

See § IX.A.2.d; Ex-1002, ¶183.

e. ***the first peripheral device having a receiver and***

See § IX.A.2.e; Ex-1002, ¶184.

f. ***at least one fixed or configurable endpoint of the functional device is exposed on the first peripheral device,***

See § IX.A.2.f; Ex-1002, ¶185.

g. ***the method further comprising: the base unit being configured to transmit and the first peripheral device being configured to receive first processed video data over the communications network,***

See § IX.A.2.g; Ex-1002, ¶186.

h. ***the functional device being configured for first video data to flow into the base unit or first video data is captured in the base unit, the first video data being processed in the base unit to generate the first processed video data, wherein the first processed video data is sent to the first peripheral device,***

See § IX.A.2.h; Ex-1002, ¶187.

i. ***the first peripheral device being configured to process the first processed video data received by the first peripheral device to generate second video data,***

See § IX.A.2.i; Ex-1002, ¶188.

j. ***the first peripheral device being configured to make the second video data available through the at least one fixed or configurable endpoint of the first peripheral device,***

See § IX.A.2.j; Ex-1002, ¶189.

k. ***the operating system of the processing device being configured to capture the second video data and to make it available through a custom or standard driver to either the host application or a 3rd party application running on the processing device or to other processing devices,***

See § IX.A.2.k; Ex-1002, ¶190.

l. ***wherein third video data, received from the host application and/or from the 3rd party application running on the processing device, is sent to an endpoint of the first peripheral device via a standard generic driver,***

See § IX.A.2.l; Ex-1002, ¶191.

m. ***the first peripheral device receiving the third video data and processing the third video data to form second processed video data,***

See § IX.A.2.m; Ex-1002, ¶192.

n. ***wherein the third video data is enhanced, and/or encoded to form the second processed data and the second processed data is sent through a wireless link to the base unit,***

See § IX.A.10.a; Ex-1002, ¶193.

o. ***wherein the base unit decrypts the second processed data, and***

See § IX.A.11.a; Ex-1002, ¶194.

p. ***wherein the base unit is configured to expose and make available the functional device that is connected to the base unit, simultaneously with a plurality of first peripheral devices by interpreting, processing and translating the electronic signals coming from the functional device.***

See § IX.A.12.a; Ex-1002, ¶195.

16. Claim 25

a. ***The method of claim 23, wherein the functional device is a second peripheral device.***

Beel discloses that the base node is coupled to "*a second peripheral device*," *e.g.*, "connection unit 52" coupled to "*the functional device*," e.g., "plug-and-play device," such as a "camera" or "loud speaker." Ex-1005, ¶118 (The base node 36…may be coupled to a second connection unit 49.); Ex-1002, ¶197; *see also* ¶¶120 ("loud speakers…attached to the base node"), 124, 126, 129 and Fig. 1a; Ex-1001, 2:24-27, 15:56-59.

17. Claim 27

a. ***A system for making a functional device available to a processing device, the functional device being connected to or in a base unit of a communications network,***

See § IX.A.2.a; Ex-1002, ¶199.

b. ***the processing device having a memory, a display and an operating system, wherein the processing device hosts a host application,***

See § IX.A.2.b; Ex-1002, ¶200.

c. ***further comprising: the first peripheral device being configured to be coupled to the processing device via a generic communications protocol,***

See § IX.A.2.c; Ex-1002, ¶201.

d. ***the base unit having a transmitter and***

See § IX.A.2.d; Ex-1002, ¶202.

e. ***the first peripheral device having a receiver and***

See § IX.A.2.e; Ex-1002, ¶203.

f. ***at least one fixed or configurable endpoint of the functional device is exposed on the first peripheral device,***

See § IX.A.2.f; Ex-1002, ¶204.

g. ***the system further comprising: the base unit being configured to transmit and the first peripheral device being configured to receive first processed video data over the communications network,***

See § IX.A.2.g; Ex-1002, ¶205.

h. ***the functional device being configured for first video data to flow into the base unit or first video data to be captured in the base unit, the first video data being processed in the base unit to generate the first processed video data, wherein the first processed video data is sent to the first peripheral device,***

See § IX.A.2.h; Ex-1002, ¶206.

i. ***the first peripheral device being configured to process the first processed video data received by the first peripheral device to generate second video data,***

See § IX.A.2.i; Ex-1002, ¶207.

j. ***the first peripheral device being configured to make the second video data available through the at least one fixed or configurable endpoint of the first peripheral device,***

See § IX.A.2.j; Ex-1002, ¶208.

k. ***the operating system of the processing device being configured to capture the second video data and to make it available through a custom or standard driver to either the host application or a 3rd party application running on the processing device or to other processing devices, and***

See § IX.A.2.k; Ex-1002, ¶209.

l. ***wherein the base unit is configured to expose and to make available the functional device that is connected to the base unit, simultaneously with a plurality of first peripheral devices by interpreting, processing and translating the electronic signals coming from the functional device.***

See § IX.A.12.a; Ex-1002, ¶210.

18. Claim 28

a. ***The system according to claim 27, wherein third video data, received from the host application and/or from the 3rd party application running on the processing device, are sent to an endpoint of the first peripheral device via a generic driver, the first peripheral device being configured to receive the third video data and to process the third video data to form second processed video data.***

See §§ IX.A.2.l-2.m; Ex-1002, ¶211.

B. Claims 1-31 of the '347 Patent Are Obvious Over Van de Laar in View of Kaplan, AAPA, and Optionally Christison

1. Rationale to Combine

Van de Laar and Kaplan disclose systems of wirelessly presenting audio/visual content. Ex-1008, abstract, FIG. 2; Ex-1007, abstract, FIG. 1. Van de Laar discloses the content is used for unified communications, such as Skype. Ex-1007, ¶128. Kaplan discloses well-known methods for presenting/transmitting information using standard operating system and data transformations. Ex-1008, ¶32, 44-49; Ex-1002, ¶215. The POSA would have been motivated to modify the receiver and data transmission system of Kaplan to with Van de Laar's WDH to improve usability and connect multiple wireless devices and access and use the functional device(s) in a unified communications. Ex-1002, ¶215.

Furthermore, the '347 patent contains AAPA that Skype is a known way to perform web conferencing disclosed by Van de Laar. Ex-1001, 8:12-33, 8:65-9:12; *see also* Ex-1009 (Skype available in 2012); Ex-1007, ¶128; Ex-1002, ¶216. Therefore, the combination of Kaplan, Van de Laar, and AAPA would result in using Skype, or similar, prior art unified communication software as a known technique to improve similar devices in the same way. Ex-1002, ¶216. The combination would create the predictable result of a unified communication system (*e.g.*, Skype) which could utilize one or more functional devices' capabilities. Ex-1002, ¶216.

Christison discloses wirelessly connecting functional devices to personal computers via a wireless peripheral device. Ex-1011, abstract. A POSA would

recognize that connecting wireless functional devices to computers was well-known, and that Christison teaches one efficient example of presenting wireless USB devices as "native devices." Ex-1011, 6:13-19; Ex-1002, ¶217.

Christison teaches one way of effecting Kaplan's virtual devices by presenting wireless USB devices as "native." Ex-1011, abstract; Ex-1002, ¶217. Kaplan, Van de Laar, and Christison could have been combined by using Christison's technique of presenting a remote device as native to improve or suggest one way for Kaplan to implement its functional devices. Ex-1002, ¶217. The combination would create the predictable result of a unified communication (*e.g.*, Skype) using USB protocols to present remote functional devices as local or "native" devices. Ex-1002, ¶217.

2. Claims 1 and 12

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

Van de Laar discloses "multiple dockee devices (such as smartphones, laptops, tablets) [*i.e.*, *processing devices*] to be simultaneously docked to a wireless docking host (WDH) [*i.e.*, *base unit*] which is connected to peripherals (such as display) [*i.e.*, *functional device*]." Ex-1007, ¶¶54, 62, 73-74 ("smartboard" and "webcam" peripherals), 82, 93, 124; Ex-1002, ¶218-19, 259; *see also*,

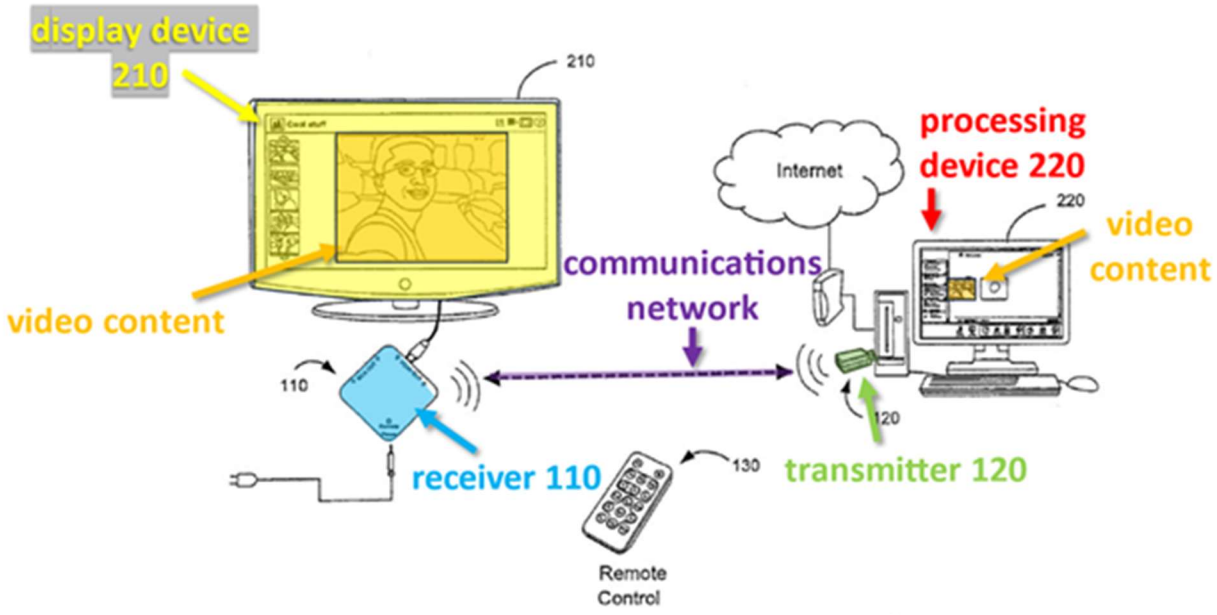
> (WDH) device that enables handling simultaneous wireless docking of multiple docking devices…the WDH managing a set of

wired and/or wireless peripherals and provides dockees access to these peripherals

Id., ¶92, and ¶¶94, 97, 106, 119, 128.

b. *the processing device having a memory, a display and an operating system, wherein the processing device hosts a host application,*

Kaplan discloses an example Van de Laar "dockee," *i.e.*, "*processing device having a memory,*" (*e.g.*, computer 220) "*a display*" (*e.g.*, as illustrated in FIG. 2), "*and an operating system*," such as Windows®. *See*, *e.g.*, Ex-1008, ¶¶47-49, 59, FIG. 2; Ex-1002, ¶220, 260.



Ex-1008, FIG. 2

Van de Laar discloses "each dockee" having "an application running locally," (*i.e.*, "*a host application*"). Ex-1007, ¶¶53-54, 58-60, 73-74, 81, 93, 121-128 and

164; Ex-1002, ¶221, 260. *See also* Ex-1007, ¶128 ("Skype," an application for bidirectional communication).

c. ***further comprising: a first peripheral device being configured to be coupled to the processing device via a generic communications protocol,***

Van de Laar discloses "The dockee device 120 has a dockee communication unit 121 [*i.e.*, *first peripheral device*] for accommodating said wireless communication with the host." The peripheral device can be coupled via "the Universal Serial Bus (USB) standard," as an example. Ex-1008, ¶17; Ex-1002, ¶222, 261; *see also*, *id*., ¶¶45 ("The ubiquity of the USB standard…make the use of a USB connection a suitable connector"), 58, claims 10-11.

d. ***the base unit having a transmitter and***

Van de Laar discloses, "The host device 100 has a host communication unit 102 for accommodating said wireless communication, for example a WiFi unit." Ex-1007, ¶75; *see also*, *id*. ¶¶1, FIG. 1; Ex-1002, ¶223, 262.

e. ***the first peripheral device having a receiver and***

Van de Laar discloses,

> A host device for wireless communication with multiple dockee devices, … comprising:
>
> …

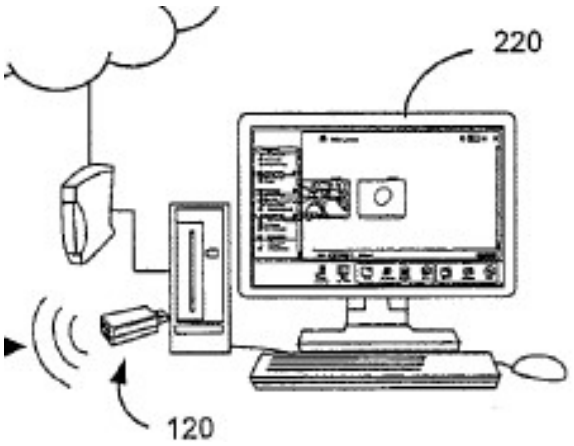
a docking processor configured for docking at least one dockee device for providing access to the at the least one peripheral for the dockee device, the dockee device comprising

a dockee communication unit configured for accommodating said wireless communication;

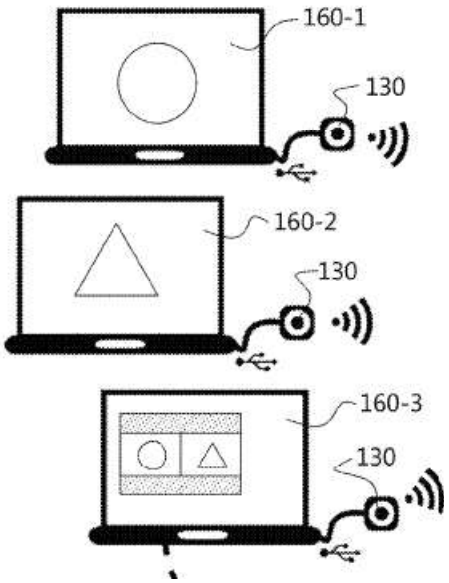
Ex-1007, claim 1; Ex-1002, ¶224, 263.

Kaplan discloses that communication units like Van de Laar's include a receiver: "The transmitter 120 also includes transceiver 450 and antenna 452, providing for two-way communications with the receiver." Ex-1008, ¶45; *see also*, *id*., ¶¶16-17, 19 ("wireless transceiver 450 that is operable to transmit data from the computer to the receiver"), FIG. 4; Ex-1002, ¶225, 263.

Kaplan and the '347 patent disclose similar peripheral devices as "a USB dongle":



Ex-1008, FIG. 2 (transmitter 120)



Ex-1001, FIG. 5 (peripheral device 130)

See also Ex-1008, ¶¶17, 58; Ex-1001, 9:13-14, 10:47-51; Ex-1002, ¶226, 263.

f. *at least one fixed or configurable endpoint of the functional device is exposed on the first peripheral device,*

Van de Laar discloses a data source/sink as "*endpoints*":

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

Ex-1007, ¶126 (emphasis added); *see also*, *id*. ¶123-125, FIG. 3 (reproduced below); Ex-1002, ¶227, 264.

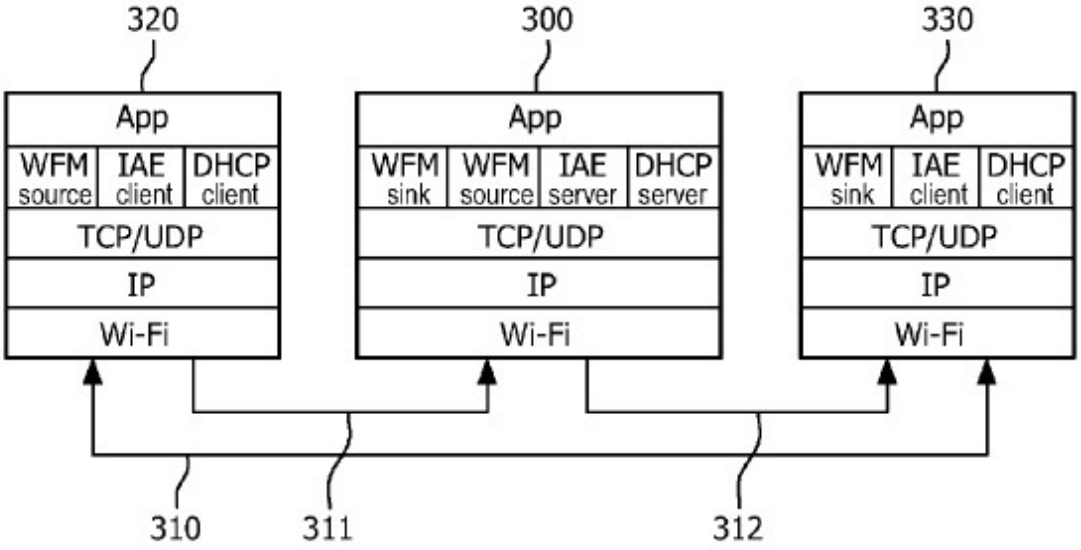


FIG. 3

Ex-1007, FIG. 3.

Van de Laar also discloses the "*functional device is exposed*":

> [V]arious dockees receive different sets of peripheral functions that can be accessed. In particular, the host, e.g. a PC, may make available to dockee shared peripherals as well as exclusive peripherals.

Ex-1007, ¶106 (emphasis added); Ex-1002, ¶228, 264. *See also*, *id*. ¶¶82, 92, 93 ("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)), 140-50.

These endpoints are either "*fixed*" (*e.g.*, "simulated" "storage") or "*configurable*" (*e.g.*, simulated AV device, such as a webcam.) Ex-1005, ¶¶43, 50, 54, 124 ("the WFM source of the WDH may be replaced by a WSB video peripheral (e.g. a simulated webcam) or as a video component stream for a web browser or a messaging service client.") 313-17; Ex-1002, ¶229; *see also* § VII.B.4. Further, it is well-known in the art that USB devices include "endpoints" to transfer data. Ex-1002, ¶45-47; 229, 264.

To the extent Barco argues that "*exposed*" 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, ¶230, 264. 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. Therefore, the additional combination with Christison discloses this limitation. Ex-1002, ¶230, 264. A POSA would find it obvious to combine Christison's remotely connected devices with Kaplan's receiver/transceiver and Van de Laar's multiple peripheral devices. Ex-1002, ¶230, 264.

g. ***the method further comprising: the base unit being configured to transmit and the first peripheral device being configured to receive first processed video data over the communications network,***

Van de Laar discloses "*the base unit*" (*e.g.*, "docking processor," or "WDH") transmitting "*first processed video data*" to the "*first peripheral device*" (*e.g.*, communication unit 121 connected to the dockees):

> When multiple people come together during a meeting or lecture, there's a need to exchange information, collaborate, share meeting results such as meeting notes, presentations, whiteboard or smartboard contents. Furthermore there is a need to easily switch presenters,

> conduct polls/surveys/exams, generate a presence list, share agenda's etc.

Ex-1007, ¶80; *see also*, ¶123.

> 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 through a set of wireless messaging and streaming protocols, whereby the WDH distinguishes the multiple dockees between primary dockees and secondary dockees, for example a presenter and attendees.

Id., ¶92; *see also*, ¶115; Ex-1002, ¶231, 265. The secondary dockees receive the "*first processed video data*" via the communication unit 121. *Id*., ¶55; Ex-1002, ¶232, 265.

h. ***the functional device being configured for first video data to flow into the base unit or first video data is captured in the base unit, the first video data being processed in the base unit to generate the first processed video data, wherein the first processed video data is sent to the first peripheral device,***

Van de Laar discloses "*the functional device*" (*e.g.*, the A/V peripherals, such as a smartboard or webcam) sending "*first video data…into the base unit*" (*e.g.*, "A/V stream" sent to wireless docking host (WDH)), which is processed and sent to the "*first peripheral device*" (*e.g.*, communication unit 121 connected to the dockees):

> The WDH provides an A/V stream representing the output being sent by presenter P to the WDH peripherals. This allows the users of the secondary dockee devices to follow the presentation (audio and/or video showing slides, smartboard contents, chats, etc.) on his or her own portable docking device, in addition to following the presentation by looking at and/or listening to the WDH peripherals.

Id., ¶115; *see also*, ¶166; Ex-1002, ¶233, 266.

Van de Laar discloses how the "*first video data*" is processed into "*first processed video data*":

> [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.

Ex-1007, ¶96; *see also* ¶73-74 (peripherals may be "webcams" or a "smartboard"), FIGs. 1-2 (peripherals (including webcams) flow into host device 100 and sent to dockee devices 120); ¶¶1, 2, 74, 115, 124, 166-167, FIG. 2; Ex-1002, ¶234, 266. Van de Laar also discloses

> [T]he display output may be merged by the WDH using split screen, PIP overlay or any other means of audio and video mixing, scaling and/or re-encoding.

Ex-1007, ¶123; *see also*, *id*. ¶¶56 ("in the host device, the docking processor is arranged…for providing, to the secondary dockee device, read access" which may be "to a modified, e.g. scaled and/or transcoded, representation of the primary AV data" (emphasis added)), 59-60; Ex-1002, ¶234, 266.

i. *the first peripheral device being configured to process the first processed video data received by the first peripheral device to generate second video data,*

Van de Laar also discloses that "*the first peripheral device* [*e.g.*, "communication unit"] *being configured to process the first processed video data*" "*to generate second video data*" (*e.g.*, received AV data processed for rendering):

> the docking processor is arranged for providing,…to the secondary dockee device, read access to the at least one peripheral for transferring at least part of the AV data to be rendered. For example, the read access may be to the original, full resolution AV data, or to a modified, e.g. scaled and/or transcoded, representation of the primary AV data. By…getting read access the secondary dockee device is enabled to receive the AV data as rendered via the peripheral.

Id., ¶56 (emphasis added); *see also*, ¶¶93, 115; Ex-1002, ¶235, 267.

j. *the first peripheral device being configured to make the second video data available through the at least one fixed or configurable endpoint of the first peripheral device,*

See §§ IX.B.2.c, f.

Van de Laar also describes "*mak[ing] the second video data available*" (*e.g.*, received AV data processed for rendering): "Moreover, the A/V output may be

offered to a secondary dockee through a simulated peripheral (e.g. simulated webcam)"). Ex-1007, ¶¶56, 93, 115; Ex-1002, ¶236, 268. Van de Laar further discloses that the data is made "*available through at least one fixed or configurable endpoint of the first peripheral device*" (*e.g.*, WFM sink or source.) *Id*., ¶¶124-26, FIG. 3; Ex-1002, ¶236, 268.

k. ***the operating system of the processing device being configured to capture the second video data and to make it available through a custom or standard driver to either the host application or a 3rd party application running on the processing device or to other processing devices,***

See § IX.B.2.j. Van de Laar discloses the dockee "*being configured to capture the second video data and to make it available…*[*to an*] *application running on the processing device*" (*e.g*., Skype):

> [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…Skype, DLNA or other audio streaming mechanism.

Ex-1007, ¶128 (emphasis added); ¶164; Ex-1002, ¶237, 269. Skype was capable of group communication calls and video sharing/streaming as early as 2015. Ex-1013. *Compare* Ex-1007, ¶55 *with* FIGs. 1-2 (secondary dockee enabled to "monitor the output on the display by receiving a video data stream of a peripheral similar to a camera function"). A POSA would recognize the secondary dockee captures this

data stream and makes it available through its driver and application to "monitor." Ex-1002, ¶238, 269.

Van de Laar also discloses this is accomplished "*through a custom or standard driver*," such a driver associated with "Wi-Fi Serial Bus and Wi-Fi Miracast." Ex-1007, ¶73 ("These peripherals are considered to support standards such as Wi-Fi Serial Bus and Wi-Fi Miracast to make their functionality available through the wireless network to other devices"); Ex-1002, ¶239, 269. Van de Laar provides "direct communication between dockee devices of the group" which allows dockees to make video data available to other dockees (*e.g.*, "*other processing devices*"). *See also*, *id*., ¶¶60, 74-76, 120, 124, 166-167; Ex-1002, ¶239, 269.

l. ***wherein third video data, received from the host application and/or from the 3rd party application running on the processing device, is sent to an endpoint of the first peripheral device via a standard generic driver,***

See § IX.B.2.k.

Van de Laar teaches that the secondary dockee can also generate "*third video data…from the…application*" (*e.g.*, shared content from an application, such as Skype) that "*is sent to an endpoint of the first peripheral device*" (*e.g.*, WFM sink or source):

> [T]he docking processor may be arranged for managing shared AV output for the multiple primary dockee devices by providing at least one of split screen, overlaying, at least one window, video scaling, audio mixing. This shared control may for example enable multiple

> primary dockees control a shared A/V output peripherals (such as TV or beamer) in a meeting room.

Ex-1007, ¶¶59, 124-26, FIG. 3; *see also*, ¶¶60, 79-86; Ex-1002, ¶240, 270. That is, a dockee may both receive and transmit A/V content that can be mixed, split, or presented picture-in-picture (PIP). *Id*., ¶123 and claim 7; Ex-1002, ¶240, 270. This can be accomplished using "*the host application and/or from the 3rd party application*", such as "Skype." Ex-1007, ¶128; Ex-1002, ¶240, 270.

Van de Laar also discloses this is accomplished "*through a standard generic driver*," such a driver associated with "Wi-Fi Serial Bus and Wi-Fi Miracast." Ex-1007, ¶73 ("These peripherals are considered to support standards such as Wi-Fi Serial Bus and Wi-Fi Miracast to make their functionality available through the wireless network to other devices"); Ex-1002, ¶241, 270. Van de Laar provides "direct communication between dockee devices of the group" which allows dockees to make video data available to other dockees (*e.g*., "*other processing devices*"). *See also*, *id*., ¶¶60, 74-76, 120, 124, 166-167; Ex-1002, ¶241, 270.

m. *the first peripheral device receiving the third video data and processing the third video data to form second processed video data, and*

Van de Laar discloses that "*the first peripheral device*" (*e.g.*, "communication unit 121") "*receiving the third video data*" (*e.g.*, "shared content") "*to form second*

processed video data" (*e.g.*, generated "WFM packets"). Ex-1007, ¶¶124-126, FIG. 3; Ex-1002, ¶242, 271.

n. *wherein the base unit receives the second processed data, and decodes and/or enhances the second processed data and forwards it to a functional device which is connected or attached to the base unit through a serial connection.*[5]

See § IX.B.2.d-e (base unit receives data).

Van de Laar teaches that "*the base unit*" (*e.g.*, "docking processor," also called wireless docking host (WDH) or host device 100) "*receives the second processed data, and decodes [/] enhances the processed data and forwards it to a functional device*":

> [T]he docking processor may be arranged for managing shared AV output for the multiple primary dockee devices by providing at least one of split screen, overlaying, at least one window, video scaling, audio mixing. This shared control may for example enable multiple primary dockees control a shared A/V output peripherals (such as TV or beamer) in a meeting room.

[5] Claim 12 recites "*second processed video data*" and to "*forwards it to a functional device or a second peripheral device which is connected or attached*." Claim 1 apparently mistakenly omitted the word "*video*."

Ex-1007, ¶59 (emphasis added); *see also*, ¶¶60, 79-86; Ex-1002, ¶243, 272. That is, a dockee may both receive and transmit A/V content that can be mixed, split, or presented picture-in-picture (PIP). *Id*., ¶123 and claim 7; Ex-1002, ¶243, 272. Van de Laar also discloses sending the data "*through a serial connection*" (*e.g.*, "USB interface 211," "HDMI 212," or "Wi-Fi Serial bus"). *Id*., ¶73, 110, abstract, FIG. 2; Ex-1002, ¶243, 272.

3. Claims 2 and 13

a. *The method of claim 1, wherein the first video data is interpreted and/or encoded in the base unit to form the first processed video data.*

See § IX.B.2.h, i. Kaplan discloses video processing, buffering, storage, which would at least obviously include "*interpret and/or encode*." Ex-1008, ¶27; Ex-1002, ¶244, 273.

Van de Laar also discloses using standard encrypted "secure direct link" Wi-Fi connections. Ex-1007, ¶¶118-119; Ex-1002, ¶245, 273. Secure wi-fi connections were ubiquitous and, as of at least 2017, used standards including WEP, WPA, WPA2, and AES, as by the Wi-Fi Alliance in 2017. Ex-1033; Ex-1002, ¶245, 273. Therefore, a POSA would have understood the secure communication protocols between devices (including base unit) referred to in both Kaplan and Van de Laar would include encryption/encoding of the data sent. It also teaches encoding data into "WFM packets." *Id*., ¶126; Ex-1002, ¶245, 273.

4. Claims 3 and 14

a. *The method of claim 2, wherein the first video data is enhanced, mixed, multiplexed, and/or encrypted in the base unit.*

See § IX.B.2.h-i; Ex-1002, ¶246, 274.

5. Claims 4 and 15

a. *The method of claim 2, wherein the first processed video data is received by the first peripheral device, and the first peripheral device is configured to decode and/or interpret the first processed video data and to generate the second video data.*

See § IX.B.2.h-i. Kaplan discloses video processing, buffering, storage, which would at least obviously include "*to decode and/or interpret*." Ex-1008, ¶27; Ex-1002, ¶247, 275. Kaplan discloses resident software application on the transmitter 120 which checks/installs "compression/decompression algorithms (codecs)." Ex-1008, ¶¶47-48; Ex-1002, ¶247, 275. A POSA would recognize and understand codec is "an encoder and a decoder" is able to "decode" or "decrypt" an incoming data stream. Ex-1002, ¶247, 275.

Van de Laar also refers to a "transcoded…representation of the primary AV data." Ex-1007, ¶56. Use of "transcoded" AV data at least obviously requires that an associated device, such as "the peripheral device" be able to "*decode and/or interpret*" the video data. Ex-1002, ¶248, 275.

6. Claims 5 and 16

a. *The method of claim 4 wherein the first peripheral device demultiplexes, and/or decrypts, the first processed video data received by the first peripheral device to generate the second video data.*[6]

See §§ IX.B.2.i, 5.a. Van de Laar discloses "audio and video mixing, scaling, and/or re-encoding" by the WDH.". *See* Ex-1007, ¶123; Ex-1002, ¶249, 276. "[*D*]*emultiplex*[*ing*]" is a similar and related video processing task. Ex-1002, ¶249, 276. A POSA would find it obvious to "*demultiplex*" data obtained through the video mixing disclosed by Van de Laar and would also understand how to "*demultiplex*" using standard algorithms, for example, to separate mixed or multiplexed video data with a known outcome and reasonable expectation of success. Ex-1002, ¶249, 276.

7. Claims 6 and 18

a. *The method according to claim 4, wherein the first processed video data is sent to the first peripheral device through a wireless link.*[7]

See §§ IX.B.2.d-e. *See also* Ex-1008, ¶¶31 ("communications channel between the transmitter 120 and the receiver 110 is provided in accordance with commercially available wireless communications standards"), 54, Table 1; Ex-1002, ¶250, 282.

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[6] Claim 16 does not recite "*to generate the second video data*."

[7] Claim 18 recites "*wherein the base unit is configured to transmit the first processed data*."

Van de Laar describes:

> peripherals locally attached through a wire or wirelessly connected to the host device…over a wireless link (e.g. Wi-Fi).

Ex-1007, ¶6 (emphasis added); Ex-1002, ¶251, 282.

8. Claims 7 and 19

a. *The method according to claim 1, wherein the first video data is for display on a display.*

See § IX.B.2.h. *See also*, Ex-1008, ¶¶21 ("audio and video data from the receiver 110"), 22, 26, 28-34, FIG. 2; Ex-1002, ¶252, 283.

Van de Laar discloses "display screen 111" coupled to "host device 100." *See*, *e.g.*, Ex-1007, ¶74, 96, FIG. 1. A POSA would find it obvious that "*video data is for display on a display*" on either the main display or dockee's display. *Id*., ¶¶92, 115; Ex-1002, ¶252, 283.

9. Claims 8 and 20

a. *The method according to claim 1, wherein the 3rd party application is a hosted Unified Communication.*

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…Skype, DLNA or other audio streaming mechanism.

Ex-1007, ¶128 (emphasis added). Skype would be an example of a "*Unified Communication*." *See* Ex-1009, Ex-1013; Ex-1002, ¶253, 284. Van de Laar also discloses "a host device 100 for wireless communication with multiple dockee devices." Ex-1007, ¶74 (emphasis added); *see also*, *id*., ¶¶60 (" multiple dockee devices to a group and accommodating direct communication between dockee devices "), 75-76, 98 ("everyone in the meeting room…collaborate[s], easily share meeting materials/results"), 120, 124, 166-167); Ex-1002, ¶253, 284.

10. Claim 9

a. *The method according to claim 1, wherein the third video data is enhanced, and/or encoded to form the second processed data and the second processed data is sent through a wireless link to the base unit.*

See § IX.B.2.l.

Van de Laar discloses that "*the third video data*" *i.e.*, data sent from a secondary dockee to the WDH ("*base unit*") "*is enhanced, and/or encoded [and] is sent through a wireless link to the base unit*" at least because the data is encoded to be sent through a "secure direct link" Wi-Fi connections. *Id.*, ¶¶118-119; Ex-1002, ¶254; *see also*, § IX.B.3a. It also teaches encoding data into "WFM packets." *Id*., ¶126; Ex-1002, ¶254.

11. Claim 10

a. *The method of claim 9, wherein the base unit decrypts the second processed data*.

Van de Laar discloses using encryption, which involves decryption on the receiving end. Ex-1007, ¶¶118-119; *see also*, § IX.B.2.h, 3.a; Ex-1002, ¶256.

12. Claims 11 and 22

a. *The method of claim 10, the base unit being configured to expose and make available the functional device that is connected to the base unit, simultaneously with a plurality of first peripheral devices by interpreting, processing and translating the electronic signals coming from the functional device.*

See § IX.B.2.f. Van de Laar discloses display screen 111 being "*expose*[*d*] *or* [*made*] *available*…*simultaneously with*" a plurality of dockee devices. *See*, *e.g.*, Ex-1007, ¶¶55-56 ("This allows secondary dockee**s** to monitor the merged display output") (emphasis added), , 72, 92, 106, 110 ("A second set of secondary dockee devices (attendees A) 221 is shown to receive the same data from the host"), 119, FIGs. 1-2); Ex-1002, ¶257, 286.

Van de Laar discloses:

> [P]rimary docking devices send output to the same display peripherals simultaneously, the display output may be merged by the WDH using split screen, PIP overlay or any other means of audio and video mixing, scaling and/or re-encoding.

Ex-1007, ¶¶123, 56 (host sends to secondary dockees "modified, e.g. scaled and/or transcoded" AV data "as rendered via the peripheral"); Ex-1002, ¶258, 286.

13. Claims 17, 24, and 31

a. *The system according to claim 12, wherein the functional device is configured to be exposed natively on the first peripheral device.*

See §IX.B.2.f.

Kaplan uses a standard USB communications protocol between the peripheral and processing device. Ex-1008, ¶17; *see also*, *id*., ¶¶45 ("The ubiquity of the USB standard and the availability of USB ports…make the use of a USB connection a suitable connector"), 58. The use of USB prevents the need for a proprietary software or driver; Ex-1002, ¶278, 303, 321.

The '347 patents suggests "*exposed natively*" means USB communication can be established without the need for proprietary software or drivers:

> When a functional device, e.g. a second peripheral device is exposed natively or as a mimic of such a device in hardware, use can be made of endpoints such as USB endpoints on the first peripheral device or the user processing device which can expose the corresponding second peripheral devices such as USB devices connected to or plugged into the base unit (as is done in a hub), so no proprietary software or drivers need to be installed to support this.

Ex-1001, 12:21-29 (emphasis added); Ex-1002, ¶277, 303, 321.

Van de Laar discloses peripheral devices "*exposed natively*" by using drivers associated with "Wi-Fi Serial Bus and Wi-Fi Miracast to make their functionality available through the wireless network to other devices." Ex-1007, ¶73, 56, 93

("simulated peripheral" would be a "mimic of such a device." Ex-1001, 12:21-29); Ex-1002, ¶279, 303, 321.

Optionally, Christison's disclosure complements Kaplan and Van de Laar. Christison discloses "Proxy WUSB [wireless USB] Hub 1000 takes advantage of this efficiency by presenting wired USB devices 1010, 1020 as if they are 'native' WUSB devices." Ex-1011, 6:17-19. The USB devices attached to the WUSB Hub appear "as if they are native WUSB [wireless USB] devices," *i.e.*, appears to the host computer as if it were attached. Ex-1011, 6:25-26; Ex-1002, ¶280, 303, 321. *See additionally*, Ex-1011, 3:18-25, 6:32-58; Ex-1001, 9:16-20.

A POSA would find it obvious to combine Christison's disclosure of remotely connecting a USB device to a processing device as "native," to instead connect the USB device as "native" USB device to the peripheral device disclosed in Kaplan, and would recognize the native device could "mimic" the functionality of Kaplan or Van de Laar's peripheral devices for use in the bidirectional communication call. Ex-1002, ¶281, 303, 321.

14. Claims 21, 26, 29, and 30

a. *The system of claim 12, wherein the base unit is configured to receive the second processed video data, and to decrypt the second processed video data and to subsequently forward it to a functional device or a second peripheral*

device which is connected or attached to the base unit through a serial connection.[8]

See §§ IX.B.2.n, 11.a; Ex-1002, ¶285, 305, 319, 320.

15. Claim 23

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

See § IX.B.2.a; Ex-1002, ¶287.

b. ***the processing device having a memory, a display and an operating system, wherein the processing device hosts a host application,***

See § IX.B.2.b; Ex-1002, ¶288.

c. ***further comprising: a first peripheral device being configured to be coupled to the processing device via a generic communications protocol,***

See § IX.B.2.c; Ex-1002, ¶289.

d. ***the base unit having a transmitter and***

See § IX.B.2.d; Ex-1002, ¶290.

e. ***the first peripheral device having a receiver and***

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[8] Claim 26 recites "second processed ~~video~~ data" and "~~to subsequently~~ forward<u>s</u> it to a functional device ~~or a second peripheral device~~ which is connected or attached." Claim 26 and 29 recites "~~decrypts~~ <u>decodes and/or enhances</u>."

See § IX.B.2.e; Ex-1002, ¶291.

f. ***at least one fixed or configurable endpoint of the functional device is exposed on the first peripheral device,***

See § IX.B.2.f; Ex-1002, ¶292.

g. ***the method further comprising: the base unit being configured to transmit and the first peripheral device being configured to receive first processed video data over the communications network,***

See § IX.B.2.g; Ex-1002, ¶293.

h. ***the functional device being configured for first video data to flow into the base unit or first video data is captured in the base unit, the first video data being processed in the base unit to generate the first processed video data, wherein the first processed video data is sent to the first peripheral device,***

See § IX.B.2.h; Ex-1002, ¶294.

i. ***the first peripheral device being configured to process the first processed video data received by the first peripheral device to generate second video data,***

See § IX.B.2.i; Ex-1002, ¶295.

j. ***the first peripheral device being configured to make the second video data available through the at least one fixed or configurable endpoint of the first peripheral device,***

See § IX.B.2.j; Ex-1002, ¶296.

k. ***the operating system of the processing device being configured to capture the second video data and to make it available through a custom or standard driver to either the***

host application or a 3rd party application running on the processing device or to other processing devices,

See § IX.B.2.k; Ex-1002, ¶297.

l. ***wherein third video data, received from the host application and/or from the 3rd party application running on the processing device, is sent to an endpoint of the first peripheral device via a standard generic driver,***

See § IX.B.2.l; Ex-1002, ¶298.

m. ***the first peripheral device receiving the third video data and processing the third video data to form second processed video data,***

See § IX.B.2.m; Ex-1002, ¶299.

n. ***wherein the third video data is enhanced, and/or encoded to form the second processed data and the second processed data is sent through a wireless link to the base unit,***

See § IX.B.10.a;, Ex-1002, ¶300.

o. ***wherein the base unit decrypts the second processed data, and***

See § IX.B.11.a; Ex-1002, ¶301.

p. ***wherein the base unit is configured to expose and make available the functional device that is connected to the base unit, simultaneously with a plurality of first peripheral devices by interpreting, processing and translating the electronic signals coming from the functional device.***

See § IX.B.12.a; Ex-1002, ¶302.

16. Claim 25

a. ***The method of claim 23, wherein the functional device is a second peripheral device.***

See § IX.B.2.a (Kaplan's display 210). Van de Laar discloses "wireless[ly]" or "[w]ired" peripherals connected to the host, which can be "display devices, audio devices, webcams." Ex-1007, ¶¶72, 1, 8-9, 62, 73, 110, 160, abstract; *See* Ex-1001, 9:15-16 ("a second peripheral device connected in some way to a base unit"), 2:25-27; Ex-1002, ¶304.

17. Claim 27

a. ***A system for making a functional device available to a processing device, the functional device being connected to or in a base unit of a communications network,***

See § IX.B.2.a; Ex-1002, ¶306.

b. ***the processing device having a memory, a display and an operating system, wherein the processing device hosts a host application,***

See § IX.B.2.b; Ex-1002, ¶307.

c. ***further comprising: the first peripheral device being configured to be coupled to the processing device via a generic communications protocol,***

See § IX.B.2.c; Ex-1002, ¶308.

d. ***the base unit having a transmitter and***

See § IX.B.2.d; Ex-1002, ¶309.

e. ***the first peripheral device having a receiver and***

See § IX.B.2.e; Ex-1002, ¶310.

f. ***at least one fixed or configurable endpoint of the functional device is exposed on the first peripheral device,***

See § IX.B.2.f; Ex-1002, ¶311.

g. ***the system further comprising: the base unit being configured to transmit and the first peripheral device being configured to receive first processed video data over the communications network,***

See § IX.B.2.g; Ex-1002, ¶312.

h. ***the functional device being configured for first video data to flow into the base unit or first video data to be captured in the base unit, the first video data being processed in the base unit to generate the first processed video data, wherein the first processed video data is sent to the first peripheral device,***

See § IX.B.2.h; Ex-1002, ¶313.

i. ***the first peripheral device being configured to process the first processed video data received by the first peripheral device to generate second video data,***

See § IX.B.2.i; Ex-1002, ¶314.

j. ***the first peripheral device being configured to make the second video data available through the at least one fixed or configurable endpoint of the first peripheral device,***

See § IX.B.2.j; Ex-1002, ¶315.

k. ***the operating system of the processing device being configured to capture the second video data and to make it available through a custom or standard driver to either the***

host application or a 3rd party application running on the processing device or to other processing devices, and

See § IX.B.2.k; Ex-1002, ¶316.

l. ***wherein the base unit is configured to expose and to make available the functional device that is connected to the base unit, simultaneously with a plurality of first peripheral devices by interpreting, processing and translating the electronic signals coming from the functional device.***

See § IX.B.12.a; Ex-1002, ¶317.

18. Claim 28

a. ***The system according to claim 27, wherein third video data, received from the host application and/or from the 3rd party application running on the processing device, are sent to an endpoint of the first peripheral device via a generic driver, the first peripheral device being configured to receive the third video data and to process the third video data to form second processed video data.***

See §§ IX.B.2.l-2.m; Ex-1002, ¶318.

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

The *Advanced Bionics* test for discretionary denial has two parts: (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 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, Christison, and Beel (used minimally against dependent claims). Petitioner relies minimally on Christison and adds new prior art to show that decoding and/or enhancing second processed data, and interpreting, processing, and translating electronic signals, in the base unit was well-known and obvious. *See* §§ IX.A.2.n, 12.a; IX.B.2.n, 12.a. The '347 patent admits that PCT publication of Beel "can be used in embodiments of the present invention" and admits that FIG. 11 of Beel includes endpoints. Ex-1001, 5:47-52 and 18:4-9.

Furthermore, Petitioner relies on new references, including Dinka, Van de Laar, and Kaplan. None were evaluated or cited during prosecution 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. 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 Dinka or its Combination with Beel

In its first asserted ground, Petitioner relies on Beel combined with Dinka. Beel was evaluated during prosecution, but the record does not demonstrate that Beel was every considered in combination with Dinka. Importantly, Dinka includes materially different disclosure addressing what the Examiner found Beel lacked: the base unit receiving and decoding/enhancing processed data and forwarding it to the functional device connected through a serial connection, and the base unit exposing the functional device to a plurality of peripheral devices. *See* §§ IX.B.2.n, 12.a. For example, Dinka discloses that "video engine is also arranged to decode video signals received over the Internet 101...for output to the UI frame buffer...and screen." Ex-1006, 9:40-48.

2. The Office Never Considered Van de Laar or Kaplan

Petitioner also relies on Van der Laar combined with Kaplan. Neither reference was presented to the Office or otherwise discussed during the prosecution of the '347 patent and each is materially different from the evaluated prior art. The combination of Kaplan and Van de Laar include additional disclosures, including of "*endpoints*" and "decodes and/or enhances…and forwards it to a functional device." *See* §§ X.B.2.f and n.

Thus, Dinka, Kaplan, and Van de Laar are new and materially different, and the combination of Beel and Dinka was never considered in determining the ’347 patent’s patentability. Therefore, discretionary denial is unwarranted.

B. The Examiner Erred in a Manner Material to the Patentability of the ’347 Patent During Examination

The examiner materially erred by overlooking specific, relevant references, including Dinka, Van der Laar, and Kaplan. These references disclose elements of the challenged claims, including the elements the Examiner thought allowable. Their disclosures, in combinations as described herein, render the ’347 patent’s claims obvious. Thus, this error reflects a significant gap in the Examiner’s evaluation of art and arguments.

Similarly, the Examiner erred in not appreciating the disclosure in Beel regarding the base unit receives and decodes/enhances second processed data to forward to a functional device, which renders the claims of the ’347 patent obvious. For example, Beel discloses the base node includes “receiving, decrypting and decoding incoming arbitrary media content .... [and] displaying incoming arbitrary media content.” Ex-1005, ¶¶147, 155, 157.

Further, the Examiner overlooked that Beel discloses the base unit making the functional device available to a plurality of peripheral devices by processing electronic signals of the functional device, *i.e.*, “base node ... receive arbitrary media

content from one or a plurality of client processing devices 31 through said connection units 47." Ex-1005, ¶132 (emphasis added). *See also* Ex-1005, ¶71.

Thus, the new grounds teach these limitations, and the Examiner materially erred by overlooking Dinka, Van de Laar, and Kaplan and, further, by not fully considering Beel, which led to the '347 patent's allowance. Thus, discretionary denial is unwarranted.

XI. CONCLUSION

Petitioners request cancelation of claims 1-31 of the '347 patent.

Dated: February 10, 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 13,968 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: February 10, 2025

By: /Stephen Yang/
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CERTIFICATE OF SERVICE

I hereby certify that on February 10, 2025, I caused a true and correct copy of the foregoing Petition for *Inter Partes* Review of U.S. Patent No. 11,966,347 and supporting exhibits to be served via Federal Express mail on the Patent Owner at the following correspondence address of record as listed on PAIR:

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