

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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

v.

BARCO NV,
Patent Owner.

IPR2025-00597
Patent 11,966,346 B2

Before MEREDITH C. PETRAVICK, DAVID C. McKONE,
and LISA A. MURRAY, *Administrative Patent Judges*.

McKONE, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Yealink (USA) Network Technology Co., Ltd., and Yealink Network Technology Co., Ltd. (collectively, “Petitioner”) filed a Petition (Paper 1, “Pet.”) requesting *inter partes* review of claims 1–22 of U.S. Patent No. 11,966,346 B2 (Ex. 1001, “the ’346 patent”). Barco, N.V. (“Patent Owner”) filed a Preliminary Response to the Petition (Paper 9, “Prelim. Resp.”).

We have authority to determine whether to institute an *inter partes* review. See 35 U.S.C. § 314; 37 C.F.R. § 42.4(a). The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted “unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” For the reasons explained below, we institute an *inter partes* review of the ’346 patent.

II. BACKGROUND

A. Related Proceedings

The parties identify IPR2024-01436 (involving US 10,762,002), IPR2024-01437 (involving US 11,403,237), IPR2024-01438 (involving US 11,258,676), IPR2024-01439 (involving US 11,422,951), IPR2025-00491 (involving US 10,684,972), and IPR2025-00598 (involving US 11,966,347) as related to this proceeding. Pet. 2; Paper 5, 1–2. Patent Owner states that the ’346 patent is not presently asserted in any matter. Paper 5, 1.

B. The '346 Patent

The '346 patent relates to making functional devices available to participants of a meeting. Ex. 1001, 1:5–7. A functional device is a peripheral device connected to a base unit. *Id.* at 9:3–4. A functional device can be “a better camera that gives a wide a room view, a better microphone and better speakers.” *Id.* at 13:17–22. Figure 5 is reproduced below:

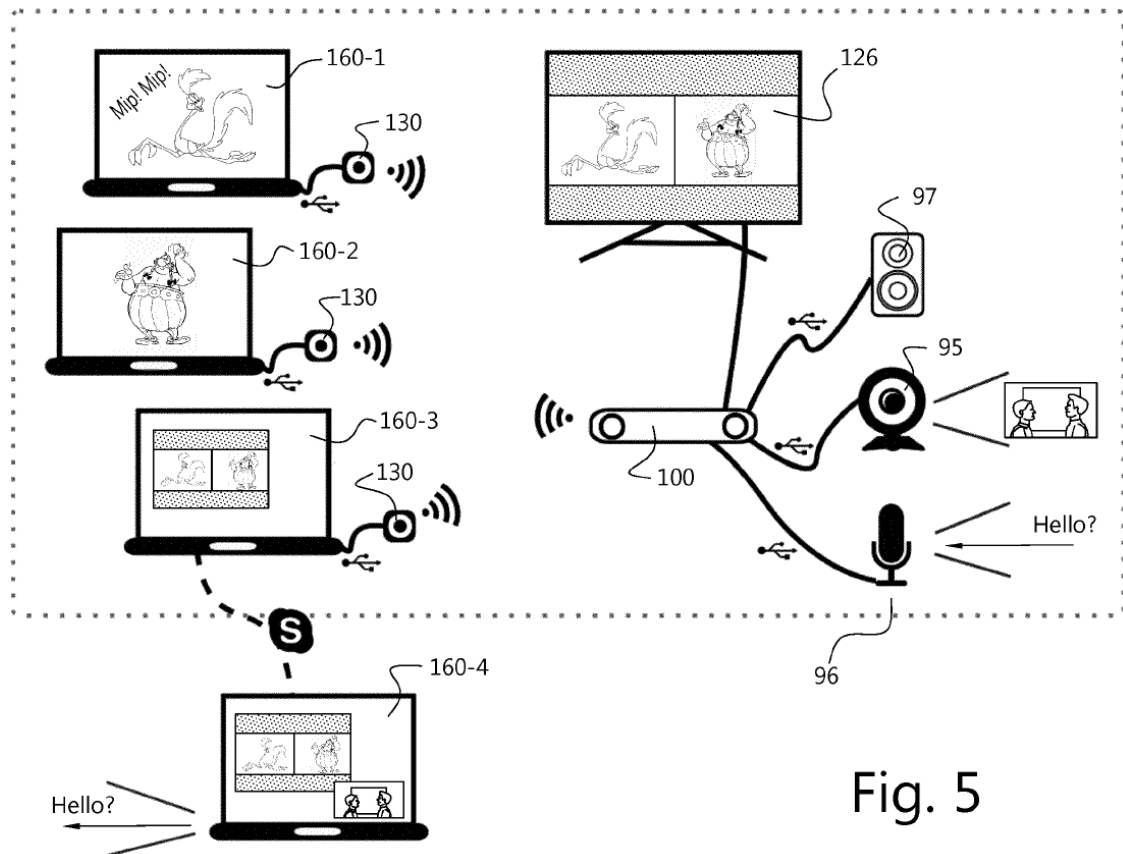


Fig. 5

Figure 5 is a drawing of an arrangement of processing devices as used in a meeting with a unified communication in progress. *Id.* at 5:41–43.

According to the '346 patent,

“Unified Communications system or tools” refers to 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.

Unified communication tool can be described as a collection of tools to do VOIP, (web) conferencing, shared whiteboarding, message exchange (e.g. chat), file transfer, or presence.

Id. at 7:66–8:6.

Configurable USB endpoints are configured when pairing first peripheral device 130 with base unit 100 or over a wireless connection between processing device 160 and base unit 100. *Id.* at 18:4–7.

Configured USB endpoints expose second peripheral devices (e.g., functional devices 91–93), which can be interpreted as custom drivers, vendor specific drivers, or default OS drivers. *Id.* at 18:7–10.

Data for display on display 126 from a second peripheral device (functional devices 91–93) can flow into base unit 100 or can be captured in base unit 100, and can be interpreted, processed, enhanced, encoded, and/or encrypted using firmware of base unit 100 to generate processed data. *Id.* at 18:34–40. These processed data are sent to first peripheral device 130 through the wireless link. First peripheral device 130, if necessary, decodes, decrypts, processes, and/or interprets the data and makes them available through one or more USB endpoints of first peripheral device 130. *Id.* at 18:40–46. These data are then captured by the operating system of processing device 160 and made available through a custom or standard driver to either the host application or a 3rd party application running on processing device 160 or to other processing devices 160 of other participants of the meeting. *Id.* at 18:46–52.

Data from the host application and/or 3rd party applications running on processing device 160 are sent to a USB endpoint of first peripheral device 130 through the system (standard generic) drivers and the USB port. *Id.* at 18:53–59. First peripheral device 130 receives these data via firmware

of first peripheral device 130, which processes, enhances, encodes, and/or encrypts the data and sends them through the wireless link to the base unit 100, which receives the data via firmware. *Id.* at 18:59–64. Base unit 100 decrypts, processes, decodes, and/or enhances the data and forwards them to the appropriate functional device connected to base unit 100. *Id.* at 18:64–19:2.

Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A system for connecting a processing device to a functional device connected to or in a base unit of a wireless connection, the system comprising:

the base unit having a transmitter,
a first display device connected to or in the base unit,
at least one functional device connected to or in the base unit, and

the processing device having a memory, a second display device, an operating system, a third party software for a Unified Communication call, a driver and a client software, when executed on the processing device, is configured to have the processing device interact directly with the base unit over a wireless connection,

wherein the base unit, via the transmitter, is configured to transmit data over the wireless connection to the processing device,

wherein the client software, when executed by a processor of the processing device, is configured to provide any simulations or translations, as required, to allow interaction between the first display device and the processing device, and wherein the client software and the driver, when executed on the processing device, are configured

to present the at least one functional device to the operating system of the processing device as a virtual functional device, and the third party software for the Unified Communication call is presented with the virtual functional device for the Unified Communication call, the processing device being configured to host the Unified Communication between two or more other processing devices, and

wherein the client software is further configured to provide data transformations based on a type of functional data from the at least one functional device to the processing device.

C. Evidence

Petitioner relies on the references listed below (Pet. 3).

Reference		Date	Exhibit No.
Beel	US 2015/0169477 A1	June 18, 2015	1005
Dinka	US 8,369,498 B2	Feb. 5, 2013	1006
van de Laar	US 2016/0014172 A1	Jan. 14, 2016	1007
Kaplan	US 2010/0295994 A1	Nov. 25, 2010	1008
Christison	US 7,761,627 B2	July 20, 2010	1011

Petitioner also relies on alleged Applicant Admitted Prior Art (AAPA) to demonstrate how a skilled artisan would have understood the teachings of the prior art. Pet. 22–23 (citing Ex. 1001, 5:35–41, 7:66–8:3, 8:53–67, 17:65–18:3).

Petitioner also relies on the Declaration of Kevin C. Almeroth, Ph.D. (Ex. 1002).

D. The Asserted Grounds of Unpatentability

Petitioner contends that claims 1–22 are unpatentable under the following grounds. Pet. 3.

Claims Challenged	35 U.S.C. §	References
1–22	103 ¹	Beel, Dinka
1–22	103	Beel, Dinka, Christison
1–22	103	van de Laar, Kaplan
1–22	103	van de Laar, Kaplan, Christison

III. ANALYSIS

A. Level of Ordinary Skill in the Art

Petitioner, relying on the testimony of Dr. Almeroth and alleged admissions by Patent Owner in litigation, contends that a person of ordinary skill in the art would 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” and that “[a]dditional educational experience could substitute for some of the work experience.” Pet. 8 (citing Ex. 1002 ¶¶ 36–37). “Patent Owner does not dispute Petitioner’s proposed level of skill in the art at this time.” Prelim. Resp. 6. For purposes of this Decision, we adopt Petitioner’s description of the level of ordinary skill in the art, as it is consistent with the technology described in the ’346 patent and the asserted prior art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

¹ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. § 103. Because the ’346 patent was filed after March 16, 2013, the effective date of the relevant amendment, the AIA version of § 103 applies.

B. Claim Construction

We construe a claim “using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. [§] 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” 37 C.F.R. § 42.100(b); *see also Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). Petitioner proposes constructions of several claim terms, including “providing simulations or translations, as required, to allow interaction between the first display device and the processing device” and “configured to provide data transformations based on a type of functional data from the at least one functional device to the processing device,” both terms appearing in claim 1, with similar terms appearing in independent claim 11. Pet. 9–15.

Specifically, Petitioner argues that “simulations or translations” means “capable of modifying data to present on the first display device” and that “as required” in “providing simulations or translations, as required,” renders “simulations or translations” optional. *Id.* at 11–12 (citing Ex. 1001, 22:54–60, 23:17–22, 23:36–41; Ex. 1002 ¶ 90).

Petitioner argues that “data transformations” means “decoding, processing, or encrypting data.” *Id.* at 12 (citing Ex. 1001, 11:52–62, 12:9–18, 14:39–54, 16:36–43, 18:34–19:2; Ex. 1002 ¶ 91).

“Patent Owner accepts the Petition’s claim construction for the purposes of” the Preliminary Response. Prelim. Resp. 5–6.

In light of Patent Owner’s acceptance, and because the proposed constructions are, on this record, consistent with the evidence cited by

Petitioner, we, too, accept Petitioner’s proposals for “providing simulations or translations, as required,” and “data transformations,” as recited in claim 1, for purposes of this Decision. Based on the record before us, we do not find it necessary to provide express claim constructions of any other claim terms. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (noting that “we need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy’”) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

C. Alleged Obviousness over Beel, Dinka, and (optionally) Christison

Petitioner contends that claims 1–22 would have been obvious over Beel, Dinka, and, optionally, Christison.² Pet. 23–46.

A claim is unpatentable under 35 U.S.C. § 103 “if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains.” We resolve the question of obviousness on the basis of underlying factual determinations, including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and

² Because we determine that Petitioner’s allegations are sufficient as to Beel and Dinka, we do not, at this stage of the proceeding, address Petitioner’s additional allegations as to Christison.

(4) objective evidence of nonobviousness, i.e., secondary considerations.³
See Graham v. John Deere Co., 383 U.S. 1, 17–18 (1966).

For the reasons explained below, we are persuaded that Petitioner has made a sufficient showing as to at least one claim.

1. Overview of Beel

Beel is directed to electronic tools for meetings. Ex. 1005 ¶ 1.

Figure 1A, reproduced below, illustrates an example:

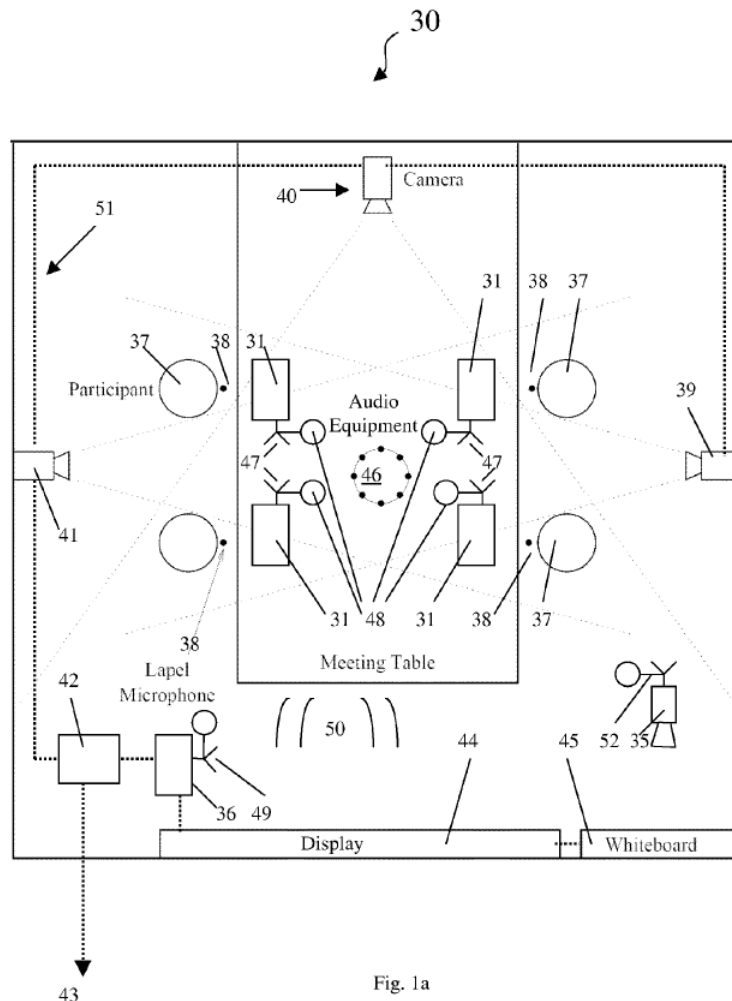


Fig. 1a

³ The record does not include allegations or evidence of objective indicia of nonobviousness.

Figure 1A is a schematic drawing of meeting room 30 with a meeting table. *Id.* ¶¶ 96, 117. Participants 37 have processing devices 31 (e.g., laptop computers, tablets, PDAs), each with first connection unit 47 providing access to network 50 (e.g., a wireless network). *Id.* ¶ 117. Processing device 31 may have a client display, processing engine, memory, and operating system. *Id.* ¶ 125. Connection unit 47 is coupled to input device 48. *Id.* ¶ 117. Base node 36 is connected to network 50 via connection unit 49. *Id.* ¶ 118. Base node 36 is coupled to display 44 (e.g., a projector and/or screen). *Id.* ¶ 119. Cameras 39, 40, 41, microphone 38, and loud speakers (not shown) are attached to base node 36, and their outputs can be stored digitally in base node 36. *Id.* ¶¶ 120–121.

In one example,

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

Id. ¶ 317.

Beel also describes an embodiment where “the software is copied on the client operating device” and “no plug and play port such as a USB port is required on the client operating device.” *Id.* ¶ 247.

2. Overview of Dinka

Dinka describes a television apparatus having an embedded processing apparatus for conducting voice or video calls via a packet-based

network. Ex. 1006, 1:12–14. Figure 1 of Dinka, reproduced below, illustrates an example:

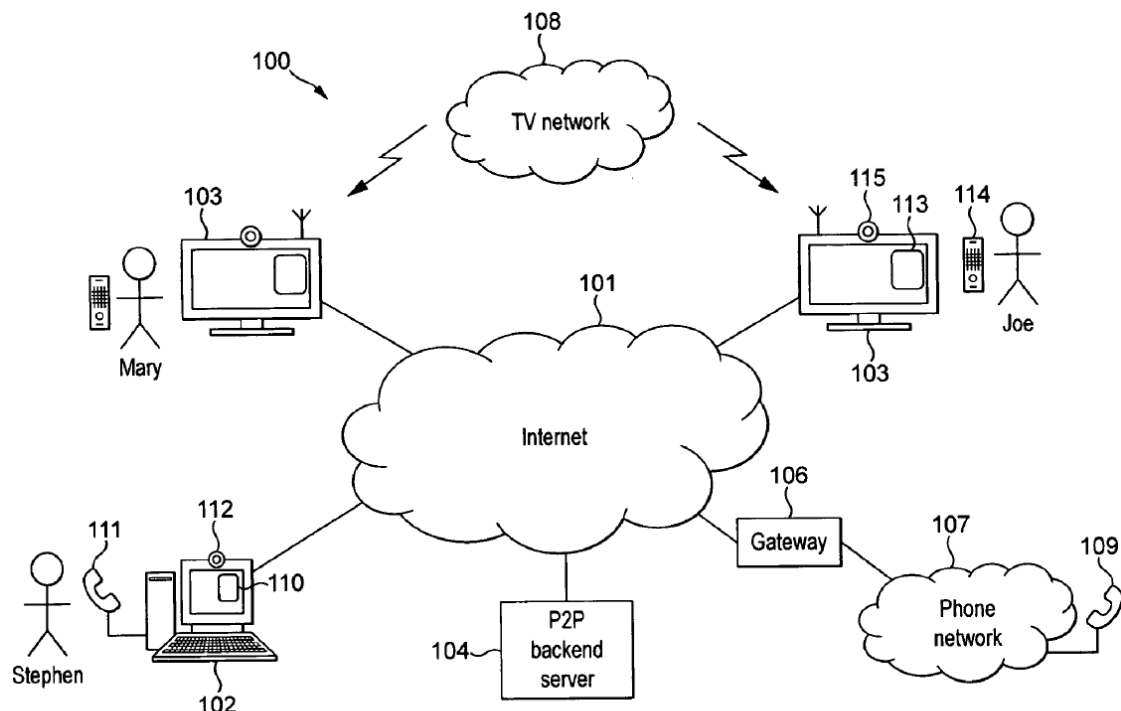


FIG. 1

Figure 1 is a schematic drawing of a communication system. *Id.* at 5:22–23.

Computer terminals 102 and televisions 103 are coupled to Internet 101. *Id.* at 5:45–49. Each computer terminal 102 includes client application 110, audio transceiver 111 (speaker and microphone), and webcam 112. *Id.* at 6:7–12. Each television 103 includes a processor and memory with communication client application 113, webcam 115, and an audio transceiver. *Id.* at 6:13–22. Television 103 is a dedicated television unit in that its primary purpose is as a television, and, at the same time it is provided with secondary embedded functionality such as voice-over-Internet Protocol (VoIP) calling. *Id.* at 7:17–21. Communication client applications 110 and 113 are peer-to-peer clients for setting up and conducting VoIP calls. *Id.* at 6:23–26.

3. Overview of Christison

Christison relates to improving the throughput of Certified Wireless Universal Serial Bus (WUSB) wire adapter systems. Ex. 1011, 1:20–23.

Figure 10 of Christison, reproduced below, illustrates an example:

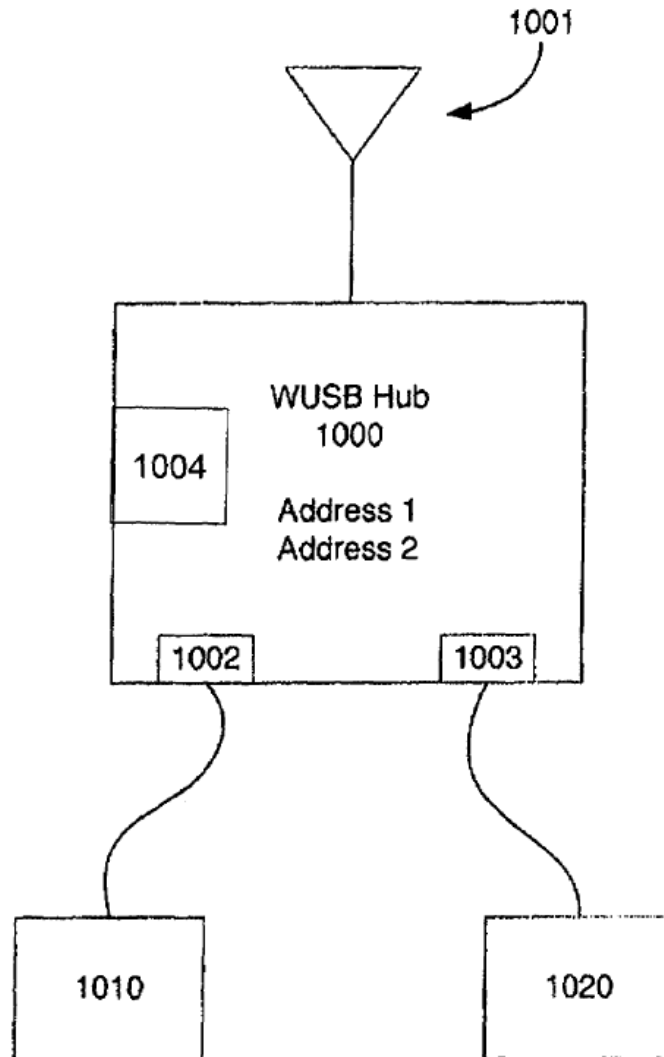


Fig. 10

Figure 10 is a block diagram of a WUSB. *Id.* at 2:52–53. Proxy WUSB Hub 1000 has wireless upstream port 1001 and one or more wired USB downstream ports 1002, 1003, wherein wired USB devices 1010, 1020 may

be plugged into the downstream wired USB ports. *Id.* at 6:20–24. Proxy WUSB Hub 1000 presents wired USB devices 1010, 1020 such that they appear to the host system as if they are “native” WUSB devices. *Id.* at 6:17–19, 6:24–26.

4. Claims 1–22

- a) Claim 1: preamble, base unit, first display device, functional device processing device, transmit data

Regarding claim 1, Petitioner contends that Beel teaches a “system for connecting a processing device to a functional device connected to or in a base unit of a wireless connection,” as recited in the preamble of claim 1.⁴ Pet. 25–26 (citing Ex. 1005 ¶¶ 40, 93, 112–114, 117–119, 194–199, 225, 288, 319, 321, 323; Ex. 1002 ¶¶ 120–122). Specifically, Petitioner contends that cameras 39, 40, 41, microphones 38, and loud speakers are “functional devices,” base node 36 is “a base unit,” and processing device 31 is “a processing device.” *Id.* (citing Ex. 1005 ¶¶ 41, 88, 120, 310, Figs. 1a, 1b).

Petitioner points to connection unit 47, including transceiver 63, in base node 36 to show that Beel teaches “the base unit having a transmitter,” as recited in claim 1. *Id.* at 26 (citing Ex. 1005 ¶¶ 129, 288; Ex. 1002 ¶ 123). Petitioner points to display 44 connected to base node 36 to show that Beel teaches “a first display device connected to or in the base unit,” as recited in claim 1. *Id.* (citing Ex. 1005 ¶¶ 119, 319; Ex. 1002 ¶ 124). Petitioner points to the functional devices listed above for the preamble to show that Beel teaches “at least one functional device connected to or in the

⁴ Because we determine that Petitioner’s allegations that the prior art discloses the preamble of claim 1 are sufficient (and, as yet, unchallenged), we need not determine whether the preamble is limiting.

base unit,” as recited in claim 1. *Id.* (citing Ex. 1005 ¶¶ 41, 88, 120, 310, Figs. 1a, 1b; Ex. 1002 ¶ 125). Petitioner argues that Beel’s description of “the processing device having a memory, a display and an operating system with pre-installed generic drivers,” Ex. 1005 ¶ 41, teaches “the processing device having a memory, a second display device, [and] an operating system,” as recited in claim 1. *Id.* at 27 (citing Ex. 1005 ¶¶ 41, 45, 56, 64, 68, 71, 94, 125, 142, 196, 310; Ex. 1002 ¶ 126).

For “wherein the base unit, via the transmitter, is configured to transmit data over the wireless connection to the processing device,” as recited in claim 1, Petitioner points to description in Beel that base node 36 includes a “transmitter/receiver [that] can be a wireless transmitter/receiver” and the peripheral device includes software for receiving media content from the base node and displaying it on the display of the processing device. *Id.* at 29 (quoting Ex. 1005 ¶ 129; citing Ex. 1005 ¶¶ 71, 120, 129, 221–248, 288; Ex. 1002 ¶ 133). Petitioner notes that Beel describes an embodiment with no peripheral device. *Id.* (citing Ex. 1005 ¶¶ 247–250).

Patent Owner does not challenge, at this stage of the proceeding, that Beel teaches these aspects of claim 1. We determine that Petitioner’s evidence is sufficient, at this stage, to show that Beel teaches these aspects of claim 1.

b) Claim 1: Unified Communication; reasons to combine
Beel and Dinka

As to “the processing device having . . . a third party software for a Unified Communication call, a driver and a client software, when executed on the processing device, is configured to have the processing device

interact directly with the base unit over a wireless connection,” as recited in claim 1, Petitioner contends that Beel describes “Web conferencing systems” corresponding to Unified Communications calls, that Beel’s peripheral device 31 has “pre-installed drivers,” and that client software on peripheral device 31 transfers screen scraped data to base unit 36 via a network. Pet. 27–28 (citing Ex. 1005 ¶¶ 85–89, 205, 208, 213–14, 215–248, Figs. 8, 9; Ex. 1002 ¶¶ 127–128). Petitioner argues that Beel’s description of communicating arbitrary media content between different users and a display and of video conferencing equipment “align[] with the definition of ‘Unified Communication call.’” *Id.* at 28 (citing Ex. 1005 ¶¶ 13, 44, 87–88, 113, 122, 252–258; Ex. 1002 ¶¶ 130–131).

Petitioner argues that Dinka teaches using the third-party Skype application for bi-directional communication, and that this unified communication application would have been an obvious example of an application to run on Beel’s system. *Id.* at 28–29 (citing Ex. 1006, code (57) (Abstract); Ex. 1002 ¶ 132); *see also id.* at 23 (“Dinka is a Skype patent, which is an example of an application that allows for bidirectional unified communication calls, as defined by the ’346 patent.” (citing Ex. 1006, code (73) (Assignee); Ex. 1001, 3:1–9, Fig. 1C)). Appellant argues that Beel describes “electronic meeting systems” and “web conferencing systems,” Ex. 1005 ¶¶ 85–89, and that the ’346 patent admits that Skype and pre-installed generic drivers are known ways to perform such web conferencing. *Id.* at 23–24 (citing Ex. 1001, 7:66–8:21, 8:53–67; Ex. 1002 ¶ 117). Dr. Almeroth testifies that “Skype was a well-known and established technique for improving similar systems in the same manner” and that “[t]he combination of these teachings would yield the predictable result of a web

conferencing system employing software, such as Skype, for hosting unified communication calls while also utilizing one or more functional device's capabilities." Ex. 1002 ¶ 117.

Patent Owner argues that Dr. Almeroth does not provide a reason why a skilled artisan would have been motivated to combine Beel and Dinka, and that, instead, he "summarily concludes that Skype's status as 'well-known' somehow would have motivated the combination of Dinka with Beel." Prelim. Resp. 16. We disagree. Dr. Almeroth testifies that Skype, as taught in Dinka, would have been an example of the type of application that would have run on Beel's system and that applying Dinka's teachings would have improved Beel's similar system in the same manner as it improved Dinka's, with predictable results. Ex. 1002 ¶¶ 117, 132. *See also KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007) ("[W]hen a patent 'simply arranges old elements with each performing the same function it had been known to perform' and yields no more than one would expect from such an arrangement, the combination is obvious." (quoting *Sakraida v. Ag Pro, Inc.*, 425 U.S. 273, 282 (1976))). On the current record, including Dr. Almeroth's testimony, Petitioner's proposed reasons to combine the teachings of Beel and Dinka have rational underpinning.

Patent Owner also argues that Dinka teaches away from the claimed subject matter. Prelim. Resp. 18–21. Patent Owner argues that "[t]he claimed process provides for use of higher quality functional devices (e.g., the audio devices (96 and 97) and webcam (95)) as well as the display with the processing device 160-3, rather than relying on low quality options of the processing device 160-3 during the virtual meeting." *Id.* at 19–20 (citing Ex. 1001, 1:12–14, 1:39–42). However, Patent Owner argues, "Dinka

actively criticizes, discourages, and discredits hosting unified communications protocol on a processing device (e.g., laptop, mobile device, or computer), the very solution presented by the '346 Patent.” *Id.* at 20. Specifically, Patent Owner (Prelim. Resp. 20–21) points to Dinka’s statements that accessing packet-based communications using a personal computer “has the disadvantage that the user must be sufficiently technically competent to download, install and operate the packet-based communication client software on their personal computer, which provides a barrier to the take up,” that “personal computers are often not located in a place where the user is either familiar or comfortable with communicating,” and that “mobile devices . . . generally do not have processing resources or display screens available to offer a full range of features, such as video calling.” Ex. 1006, 2:4–18.

“A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.” *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994). Patent Owner’s argument is unpersuasive at least because Dinka expressly describes using VoIP technology on computer terminals 102. Ex. 1006, 5:45–48 (“A plurality of computer terminals 102 are shown coupled to the Internet 101, each comprising a network interface for communicating over the Internet.”), 6:7–8 (“Each computer terminal 102 is installed with a communication client application 110.”), 6:23–26 (“The communication client applications 110 [of computer terminals 102] and 113 [of television sets 103] are preferably peer-to-peer clients for setting-up and conducting VoIP calls according to peer-to-peer principles as discussed

above.”). Thus, Dinka does not lead a skilled artisan in a direction divergent from the path taken in the ’346 patent. Moreover, “[a] reference may be read for all that it teaches, including uses beyond its primary purpose.” *In re Mouttet*, 686 F.3d 1322 1331 (Fed. Cir. 2012). Thus, even if Dinka expresses a preference for conducting VoIP calls using a television set, a skilled artisan still would have considered Dinka’s teaching of using computers for such calls. *See id.* at 1334 (“This court has further explained that just because better alternatives exist in the prior art does not mean that an inferior combination is inapt for obviousness purposes.”). Patent Owner’s teaching away argument is unpersuasive.

On the current record, Petitioner has shown sufficiently that Beel and Dinka teach “the processing device having . . . a third party software for a Unified Communication call, a driver and a client software, when executed on the processing device, is configured to have the processing device interact directly with the base unit over a wireless connection,” as recited in claim 1.

c) Claim 1: simulations and translations

As to “wherein the client software, when executed by a processor of the processing device, is configured to provide any simulations or translations, as required, to allow interaction between the first display device and the processing device,” as recited in claim 1, Petitioner points to description in Beel that the processing device routes screen scraped data to the communications network and that display 44 is adapted to receive arbitrary media content. Pet. 30 (citing Ex. 1005 ¶¶ 221, 247–250; Ex. 1002

¶¶ 134–135).⁵ Petitioner argues that Beel’s processing device includes software for receiving, decrypting, decoding, and scaling arbitrary media content. *Id.* at 31 (citing Ex. 1005 ¶¶ 71–72; Ex. 1002 ¶ 136). Petitioner (Pet. 31) further points to description in Beel of software on processing device 31 that screen scrapes video data, and

The video signal is then encoded in a video encoder 3, packetized in a video packetizer 4, prepared in an HID protocol packetizer 5 for transport over the plug and play interface using a generic driver 10, such as over a USB interface using generic pre-installed drivers, e.g. a generic pre-installed Human Interface Driver (HID).

Ex. 1005 ¶ 320, Fig. 11. *See also* Ex. 1002 ¶ 137.

Patent Owner argues that “the Petition points to disclosure of encryption or encoding,” and that “[e]ncryption is not translation or simulation.” Prelim. Resp. 23 (citing Pet. 31; Ex. 1005, ¶¶ 71–72, 320, 322–323). According to Patent Owner, “[t]he Petition fails to explain how or why the alleged encryption or encoding teaches or suggests the claimed simulations or translation that must be performed by the client software.” *Id.*

Petitioner proposes construing “simulations and translations” to mean “capable of modifying data to present on the first display device.” Pet. 12. Patent Owner “accepts” this construction (Prelim. Resp. 5–6) and we do too, for purposes of this Decision, as explained above. On the current record, including the testimony of Dr. Almeroth, we find that encryption, encoding,

⁵ We agree with Patent Owner (Prelim. Resp. 23) that Petitioner’s citations to the resizing shown in Figure 2 of Beel and the corresponding description at paragraph 143 appear inapposite, as base node 36 performs the auto composition described in paragraph 143.

and scaling are examples of modifying video data to be presented on a display, such as display 44. Accordingly, we are not persuaded by Patent Owner. Instead, we find that Petitioner's evidence is sufficient, at this stage of the proceeding, to show that Beel teaches "wherein the client software, when executed by a processor of the processing device, is configured to provide any simulations or translations, as required, to allow interaction between the first display device and the processing device," as recited in claim 1.

d) Claim 1: virtual functional device

As to "wherein the client software and the driver, when executed on the processing device, are configured to present the at least one functional device to the operating system of the processing device as a virtual functional device," as recited in claim 1, Petitioner contends that Beel describes the peripheral device presenting a speaker to the processing device as a virtual audio speaker device, and channeling audio to the speaker by capturing the audio with a device driver and streaming it to the base unit to which the speaker is attached. Pet. 31–32 (citing Ex. 1005 ¶¶ 71–72, 120–121, 313–317; Ex. 1002 ¶ 38). As to "the third party software for the Unified Communication call is presented with the virtual functional device for the Unified Communication call," as recited in claim 1, Petitioner argues that, in its proposed combination, the third party software (e.g., Skype) would have been presented with the virtual audio device. *Id.* at 33 (citing Ex. 1005 ¶¶ 252–253, 313; Ex. 1002 ¶ 140). Patent Owner does not challenge, at this stage of the proceeding, that Beel and Dinka teach these

aspects of claim 1. We determine that Petitioner's evidence is sufficient, at this stage, to show that Beel and Dinka teach these aspects of claim 1.

We note that, for “wherein the client software and the driver, when executed on the processing device, are configured to present the at least one functional device to the operating system of the processing device as a virtual functional device,” and “the third party software for the Unified Communication call is presented with the virtual functional device for the Unified Communication call,” Petitioner “optionally” relies on a combination with Christison. Pet. 32–33 (citing Ex. 1011, 3:40–41, 6:17–19, 6:25–26, 6:32–58); Ex. 1002 ¶¶ 139, 141). Patent Owner, for its part, argues that a skilled artisan would not have combined the teachings of Christison with those of Beel and Dinka. Prelim. Resp. 16–18. Because Petitioner has shown sufficiently, at this stage of the proceeding, that Beel and Dinka teach these limitations, we do not yet address whether Christison also teaches them.

As to “the processing device being configured to host the Unified Communication between two or more other processing devices,” as recited in claim 1, Petitioner argues that Beel expressly states that “[e]ach of the processing devices 31 can be a host device.” Pet. 34 (quoting Ex. 1005 ¶ 117; citing Ex. 1005 ¶¶ 13, 44, 87–88, 113, 122, 142, 196, 221, 252–258; Ex. 1002 ¶ 142). Patent Owner does not challenge, at this stage of the proceeding, that Beel and Dinka teach this aspect of claim 1. We determine that Petitioner's evidence is sufficient, at this stage, to show that Beel and Dinka teach this aspect of claim 1.

e) Claim 1: data transformations

As to “wherein the client software is further configured to provide data transformations based on a type of functional data from the at least one functional device to the processing device,” as recited in claim 1, Petitioner argues that Beel describes decoding and decrypting audio data using encoders/encryptors specific to audio data and that Beel describes processing devices 31 receiving from the base unit audio and video data from cameras and microphones. Pet. 34–35 (citing Ex. 1005 ¶¶ 71–72, 247–250, 314, 320–323; Ex. 1002 ¶¶ 143–144).

Petitioner contends that Beel describes bidirectional audio-video communication from a conference call to user PCs and that Dinka “reinforces the obviousness of bidirectional data communication for Beel’s electronic meeting system.” *Id.* at 35 (citing Ex. 1005 ¶¶ 50, 56, 71, 75, 93, 119, 122, 126, 298, 310–11; Ex. 1006, code (57) (abstract); Ex. 1002 ¶¶ 145–146). Petitioner also argues that Dinka describes providing data transformations based on types of functional data in its description of a voice engine encoding speech signals. *Id.* at 36 (citing Ex. 1006, 9:32–50; Ex. 1002 ¶ 146). Dr. Almeroth testifies that “[t]ransformations of A/V data, such as encoding and decoding, inherently depend on the ‘type of functional data’ being processed. For instance, a ‘voice codec’ is used for audio data, while a ‘video codec’ is applied to visual data.” Ex. 1002 ¶ 146. From this, Petitioner infers that the processing device would have used a video codec to encode/decode video signals. Pet. 36 (citing Ex. 1002 ¶ 146).

Patent Owner argues that Beel describes encryption only for a virtual audio device, and not for other types of data; thus, Patent Owner concludes, the Petition does not show transformations are performed based on a type of

functional data.⁶ Prelim. Resp. 24 (citing Pet. 35; Ex. 1005 ¶¶ 314, 320–323). Patent Owner also argues that the Petition relies on description in Beel of communications from the processing device to the base node, rather than communications from the base node to the processing device, and provides no evidence of communication from microphone 96 or speaker 97 to processing device 160-3. *Id.* at 26–27 (citing Ex. 1005 ¶¶ 71–72, 120, 144–145, 247–250).

Patent Owner is incorrect. With reference to Beel’s Figure 1a (reproduced above), Beel describes:

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

Ex. 1005 ¶ 120. Here, Beel expressly describes microphones 38 transmitting audio data to processing devices 31, which may be attached to base node 36. Beel also describes software executed on the processing device for receiving media content from the network, which is connected to the base node.

Id. ¶¶ 71–72. Thus, Petitioner has shown sufficiently, on this record, that Beel teaches “wherein the client software is further configured to provide data transformations based on a type of functional data from the at least one functional device to the processing device,” as recited in claim 1.

⁶ Patent Owner’s arguments regarding Dr. Almeroth’s testimony, Prelim. Resp. 24–25 (citing Ex. 1002 ¶ 143, Ex. 2002, 101:1–5, 121:15–19), appear to mischaracterize the testimony and its relevance to this proceeding. Those arguments are not persuasive.

Moreover, Petitioner cites Dinka to show that communications in the combined system would have been bi-directional. Pet. 35–36. Thus, even assuming that Patent Owner is correct that Beel only teaches communications from the processing device to the base unit, Petitioner’s combination teaches communication in the other direction. Thus, Patent Owner attacks Beel individually without accounting for Petitioner’s combination. *See In re Keller*, 642 F.2d 413, 426 (CCPA 1981) (“[O]ne cannot show non-obviousness by attacking references individually where, as here, the rejections are based on combinations of references.”).

As to Dinka, Patent Owner argues that it does not relate to communications from a functional device, connected to a base node, to a processing device. Prelim. Resp. 27–28. However, Petitioner cites to Beel to show communication between a processing device and a functional device via a base node; thus, Patent Owner once again attacks Dinka individually without accounting for Petitioner’s combination. *See Keller*, 642 F.2d at 426. Patent Owner also reiterates its argument, which we find unpersuasive for the reasons above, that Dinka teaches away from providing functional device capabilities to processing devices. Prelim. Resp. 28.

In sum, on the current record, Petitioner has shown a reasonable likelihood that claim 1 would have been obvious over Beel and Dinka.

f) Claims 2–22

The parties present their arguments for independent claim 11 along with those for claim 1. Pet. 44–45; Prelim. Resp. 19, 23. Claims 2–10 and 22 depend, directly or indirectly, from claim 1. Claims 12–21 depend, directly or indirectly, from claim 11. Patent Owner does not present

separate arguments for claim 11 or the dependent claims. We have analyzed Petitioner's arguments and evidence for claims 2–22 (Pet. 36–46) and, on the current record, conclude that Petitioner has shown sufficiently that claims 2–22 would have been obvious over Beel and Dinka.

D. Alleged Obviousness over van de Laar, Kaplan, and (optionally) Christison

Petitioner contends that claims 1–22 would have been obvious over van de Laar, Kaplan, and, optionally, Christison. Pet. 46–67.

Patent Owner has raised a legitimate concern as to whether Petitioner is likely to show obviousness of any claim pursuant to these grounds, as explained below.

I. Overview of van de Laar

Van de Laar describes a host device in wireless communication with multiple “dockee” devices and coupled to at least one peripheral for rendering audio or video data. Ex. 1007 ¶ 1. Figure 1 of van de Laar, reproduced below, illustrates an example:

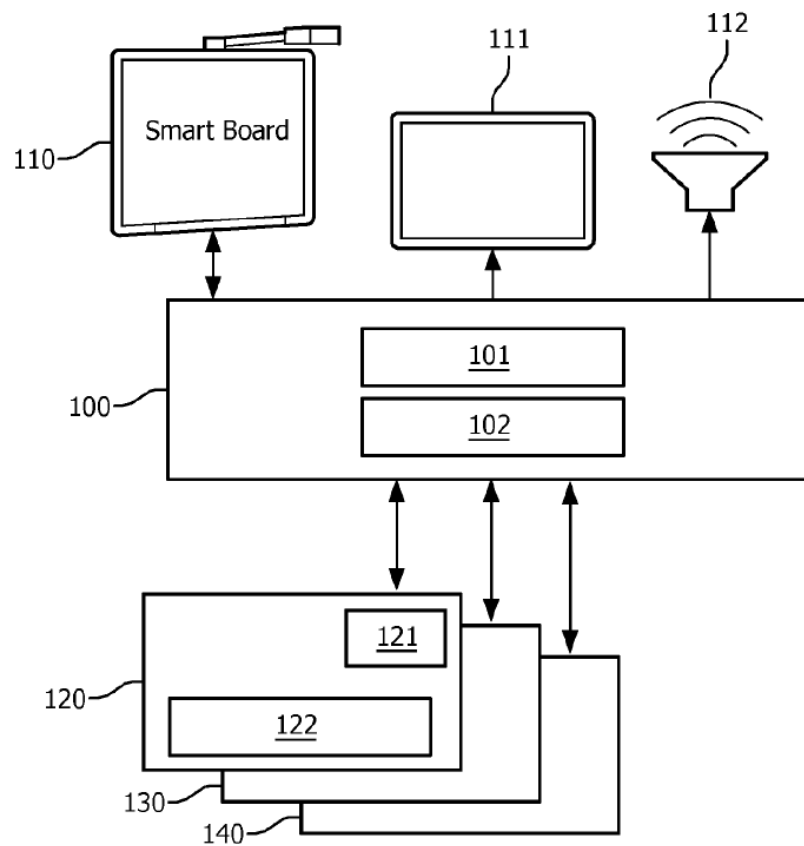


FIG. 1

Figure 1 is a block diagram of a wireless docking system. *Id.* ¶ 65.

Host device 100 is coupled to several peripherals, including smartboard 110, display screen 111, and loudspeaker system 112 for rendering audio or video data (AV data). *Id.* ¶ 74. Host device 100 wirelessly communicates with dockee devices 120, 130, 140. *Id.* Dockee devices can be mobile phones, laptops, or tablet computers. *Id.* Dockee device 120 includes dockee communication unit 121 to accommodate wireless communication with host 110. *Id.* ¶ 76. “The system enables multiple dockee devices (such as smartphones, laptops, tablets) to be simultaneously docked to a wireless docking host (WDH) which is

connected to a set of peripherals (such as display, mouse, shared local storage, lights/blinds controls, internet connection).” *Id.* ¶ 82. Van de Laar describes two types of dockee devices, primary dockee device 120 and secondary dockee device 130. *Id.* ¶ 77. According to van de Laar,

The primary and secondary dockee devices are different in that different access is established to at least one peripheral, so different sets of access rights and peripheral functions are assigned to each of said first and second dockees. In particular, to the primary dockee device, control is provided over the at least one peripheral for determining the AV data to be rendered. To the secondary dockee device, the AV data to be rendered via the at least one peripheral is additionally transferred so as to enable monitoring the AV output data locally at the secondary dockee, e.g. rendering video on the display of the dockee device.

Id. “Primary dockee devices will have direct access to the peripheral functions offered by the WDH, whereas the secondary dockee devices will be connected to the WDH to enable monitoring selected AV data. Hence the dockee devices docked as secondary dockee are able to monitor output (e.g. merged display output) of the primary devices to the peripherals.” *Id.* ¶ 82.

Van de Laar describes a “benefit” of the system, i.e., “it allows primary dockees to be able to present content using the peripherals connected to a WDH, such as a large screen and a USB presentation remote control, and that other people in the meeting/lecture room can connect to the presenter and to each other for all kinds of coll[a]b[o]ration and interaction purposes.” *Id.* ¶ 94.

2. Overview of Kaplan

Kaplan is directed to transmitting video footage from a source to a display device. Ex. 1008 ¶ 5. Figure 2 of Kaplan, reproduced below, illustrates an example:

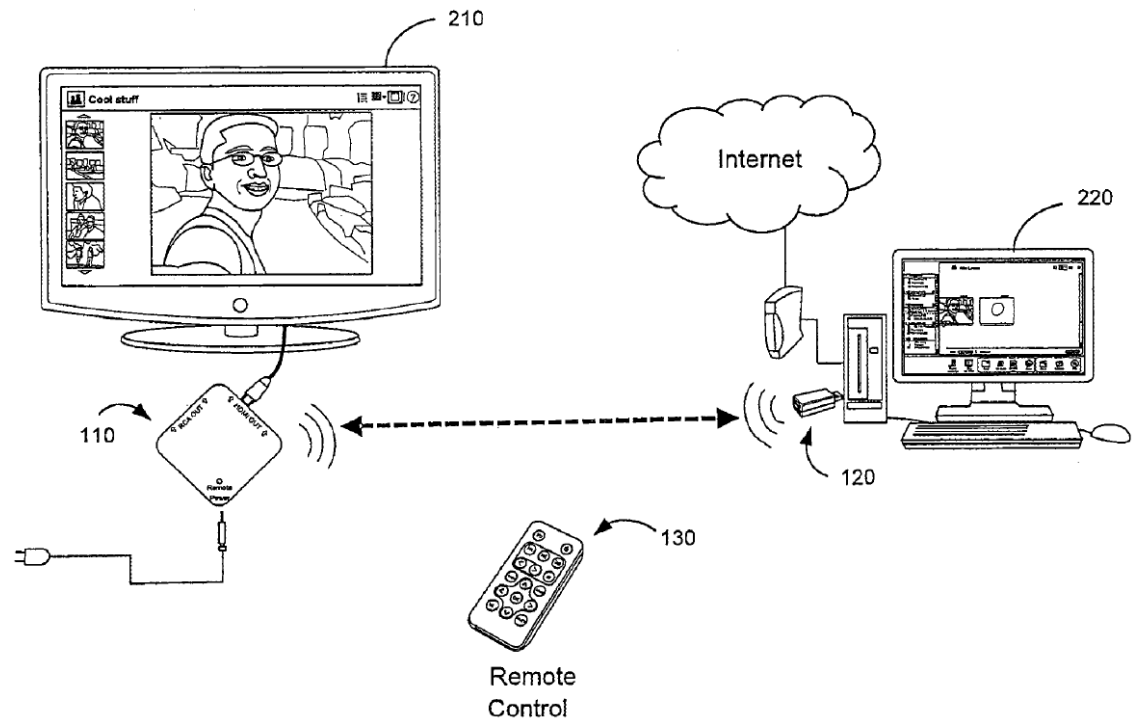


FIG. 2

Figure 2 is a drawing of a communications system. *Id.* ¶ 11. Receiver 110 is connected to display device 210, e.g., a television or video display monitor, via an HDMI cable carrying audio and video data. *Id.* ¶ 21. Remote control 130 communicates with receiver 110 to control playback of video footage on display device 210. *Id.* ¶ 19. Display device 210 can show a user interface generated either by receiver 110, transmitter 120, computer 220, or a combination of these components. *Id.* ¶ 26. Transmitter 120 (which can be a transceiver) is connected to computer 220 via a USB connector. *Id.* ¶ 45, Fig. 4. In one example, “if video content is stored on the computer 220 at a resolution of 480p, up-scaling could be performed on

the receiver 110 to provide a 720p signal for display on the display device 210 (e.g., the television).” *Id.* ¶ 32. Or, “if the television can display 1080p video content and the content provided by the HDMI connection is 720p, then the television can upscale the content to 1080p for display.” *Id.*

3. Claims 1–22

As explained above, van de Laar describes two different types of “dockee” devices, primary dockees and secondary dockees, with “different sets of access rights and peripheral functions” assigned to them. Ex. 1007 ¶ 77. For example, a primary dockee device is given control of a peripheral for determining the AV data to be rendered, while a secondary dockee device is able to monitor the AV data locally. *Id.*

The preamble of claim 1 recites a “system for connecting a processing device to a functional device connected to or in a base unit of a wireless connection.” For the preamble, Petitioner contends that a dockee device, in general, is a “processing device,” as recited in claim 1, but Petitioner does not specify whether it maps a primary dockee device or secondary dockee device to a processing device. Pet. 49 (citing Ex. 1007 ¶¶ 82, 94, 97, 106, 119; Ex. 1002 ¶¶ 187–190).

As to “the processing device having . . . a third party software for a Unified Communication call, a driver and a client software, when executed on the processing device, is configured to have the processing device interact directly with the base unit over a wireless connection,” and “the processing device being configured to host the Unified Communication between two or more other processing devices,” as recited in claim 1, Petitioner (Pet. 51, 57) identifies Skype as a Unified Communication and

relies on the following description in van de Laar to show a dockee device with such third party Skype software:

[A] primary dockee running a docking application using Wi-Fi Miracast (WFM) over IP and connected to a WDH functioning as group owner (GO) in a Wi-Fi Direct network, for example in intra BSS mode. The primary dockee will function as a WFM source and the 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 in broadcast mode. Optionally the WDH may scale the audio/video data to constrain bandwidth.

...

In another embodiment, the WDH may enable primary dockees to provide output to the WDH and/or its audio peripherals through an audio stream between the dockee and the WDH. This may be based on WSB Audio, Wi-Fi Direct Play Service, VoIP, XMPP Skype, DLNA or other audio streaming mechanism. The WDH can mix this with the audio output for the audio peripherals so that all people in the room can hear it.

Ex. 1007 ¶¶ 126, 128. Thus, here, Petitioner relies on van de Laar's primary dockee device to show the processing device having third party Skype software. Pet. 51.

This is consistent with Petitioner's allegations for "the third party software for the Unified Communication call is presented with the virtual functional device for the Unified Communication call," as recited in claim 1, where Petitioner relies on van de Laar ¶ 128 to show that primary dockee devices include such Skype software. Pet, 56. And, as to "wherein the client software, when executed by a processor of the processing device, is configured to provide any simulations or translations, as required, to allow interaction between the first display device and the processing device," Petitioner again points to van de Laar's description of software that allows

primary dockee devices to present content using peripherals. *Id.* at 54 (citing Ex. 1007 ¶¶ 74, 92, 94, 119; Ex. 1002 ¶ 201).

Yet, when analyzing van de Laar’s applicability to “wherein the client software and the driver, when executed on the processing device, are configured to present the at least one functional device to the operating system of the processing device as a virtual functional device,” as recited in claim 1, Petitioner points to functionality of the secondary dockee devices for presenting a functional device as a virtual functional device. *Id.* at 55–56 (citing Ex. 1007 ¶ 54, 93, 124; Ex. 1002 ¶ 204–205).

Patent Owner argues that “the Petition relies on the secondary dockee with respect to teachings of the virtual functional device” and “on the primary dockee’s use of Skype,” and “provides no evidence to reconcile these differences, but instead draws upon the primary dockee and secondary dockee indiscriminately.” Prelim. Resp. 34.

We share Patent Owner’s concern. At this stage of the proceeding, we are not persuaded that Petitioner’s evidence and argument show that van de Laar teaches one processing device, e.g., dockee device, that meets all requirements of a processing device in claim 1.⁷ We note that Petitioner relies on AAPA, Kaplan, and Christison for additional teachings related to

⁷ Although we do not understand Petitioner to argue that more than one dockee device, when taken together, meet the requirements of “a processing device,” this is not a situation that implicates the Federal Circuit’s “general rule that the use of the indefinite articles ‘a’ or ‘an’ means ‘one or more.’” *SanDisk Corp. v. Kingston Tech. Co.*, 695 F.3d 1348, 1360 (Fed. Cir. 2012). Although claim 1 does not preclude multiple processing devices, the references in claim 1 to required characteristics of “the processing device” make clear that at least one processing device must meet such requirements.

these claim limitations. Pet. 53, 54–55, 57. However, these additional teachings do not appear to cure the defect in Petitioner’s showing.

Nevertheless, because Petitioner has made a sufficient showing for one claim as to at least one ground, we proceed on all claims and all grounds presented in the Petition. *See* 37 C.F.R. § 42.108(a) (“When instituting *inter partes* review, the Board will authorize the review to proceed on all of the challenged claims and on all grounds of unpatentability asserted for each claim.”).

IV. CONCLUSION

Petitioner has established a reasonable likelihood that it would prevail with respect to at least one claim of the ’346 patent.

Our factual findings, conclusions of law, and determinations at this stage of the proceeding are preliminary, and based on the evidentiary record developed thus far. This is not a final decision as to the patentability of the claims for which *inter partes* review is instituted. Our final decision will be based on the record as fully developed during trial.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that pursuant to 35 U.S.C. § 314(a), an *inter partes* review is instituted as to claims 1–22 of the ’346 patent on the grounds set forth in the Petition; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial; the trial will commence on the entry date of this decision.

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