

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.

US Patent No. 11,966,346

Inter Partes Review No.: IPR2025-00597

PETITIONER REPLY
TO
PATENT OWNER RESPONSE

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EXHIBIT	DESCRIPTION
Ex-1001	U.S. Patent No. 11,966,346 (“346 patent”)
Ex-1002	Declaration of Kevin C. Almeroth, Ph.D.
Ex-1003	Curriculum Vitae of Kevin C. Almeroth, Ph.D.
Ex-1004	File History of U.S. Patent No. 11,966,346
Ex-1005	U.S. Publication No. 2015/0169477 (“Beel”)
Ex-1006	U.S. Patent No. 8,369,498 (“Dinka”)
Ex-1007	U.S. Publication No. 2016/0014172 (“Van de Laar”)
Ex-1008	U.S. Publication No. 2010/0295994 (“Kaplan”)
Ex-1009	Skype Webpage (Archived Sept. 14, 2012) (https://web.archive.org/web/20120914232239/http://www.skype.com/intl/en-us/home) (accessed Feb. 3, 2025).
Ex-1010	USB Endpoints and Their Pipes - Windows drivers _ Microsoft Learn.pdf (https://learn.microsoft.com/en-us/windows-hardware/drivers/usbcon/usb-endpoints-and-their-pipes) (accessed Feb. 3, 2025)
Ex-1011	U.S. Patent No. 7,761,627 (“Christison”)
Ex-1012	EP3732827B1 (“Renard”)
Ex-1013	Skype Webpage (Archived Nov. 28, 2015) (https://web.archive.org/web/20151128100316/http://www.skype.com/en/) (accessed Feb. 3, 2025)
Ex-1014	U.S. Patent Application Publication No. 2002/0196378 (“Slobodin”)
Ex-1015	U.S. Patent Application Publication No. 2008/0074560 (“Ichieda”)
Ex-1016	English Translation of JP Patent Application Publication No. 2007-208606 (“Maeda”)
Ex-1017	JP Patent Application Publication No. 2007-208606
Ex-1018	Certification for English Translation of JP Patent Application Publication No. 2007-208606
Ex-1019	U.S. Patent Application Publication No. 2002/0174254 (“Kita”)
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”)
Ex-1024	JP Patent Application Publication No. 2008-165007
Ex-1025	Certification for English Translation of Japanese Patent Application Publication No. 2008-165007

EXHIBIT	DESCRIPTION
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
Ex-1030	IOGear Installation Guide, "Wireless USB to VGA Kit," 2008
Ex-1031	Dictionary definition of "Communication Protocol"
Ex-1032	WIPO Publication No. WO 2012/128972 ("Scragg")
Ex-1033	Wi-Fi Security Webpage (Archived Aug. 16, 2017) (https://web.archive.org/web/20170816134219/http://www.wi-fi.org/discover-wi-fi/security) (accessed Feb. 3, 2025)
Ex-1034	Dictionary definition of "transform"
Ex-1035	What is screen scraping? By Alexander Gillis (https://www.techtarget.com/searchdatacenter/definition/screen-scraping) (accessed Feb. 10, 2025)
Ex-1036- Ex-1049	RESERVED
Ex-1050	December 18, 2025 Deposition Transcript of Dr. Michael C. Brogioli for IPR2025-00491
Ex-1051	Microsoft, "USB device drivers (Windows Drivers)," Microsoft Learn, https://learn.microsoft.com/en-us/windows-hardware/drivers/usbcon/ (accessed Mar. 2026)
Ex-1052	"Universal Serial Bus Specification, Revision 2.0," §§ 5.3, 9.1–9.2, April 27, 2000, http://www.poweredusb.org/pdf/usb20.pdf (accessed Mar. 2026)
Ex-1053	"Virtual Audio Device (Kernel Streaming)," Microsoft Learn, https://learn.microsoft.com/en-us/windows-hardware/drivers/audio/virtual-audio-devices (accessed Mar. 2026)
Ex-1054	"Windows Driver Model (WDM)," Microsoft Learn, https://learn.microsoft.com/en-us/windows-hardware/drivers/kernel/introduction-to-wdm (accessed Mar. 2026)
Ex-1055	"About Multimedia (Audio/Video)," Microsoft Developer Network Archive, https://learn.microsoft.com/en-us/windows/win32/multimedia/about-multimedia (accessed Mar. 2026)

EXHIBIT	DESCRIPTION
Ex-1056	“Wireless USB Specification, Revision 1.1,” Wireless USB Promoter Group, Sept. 2010, https://www.usb.org/document-library/wireless-usb-specification-rev-11 (accessed Mar. 2026)
Ex-1057	Salman A. Baset & Henning Schulzrinne, “An Analysis of the Skype Peer-to-Peer Internet Telephony Protocol,” Columbia University, 2006, https://arxiv.org/abs/cs/0412017 (accessed Mar. 2026)
Ex-1058	“Wi-Fi Peer-to-Peer (P2P) Technical Specification, Version 1.7,” Wi-Fi Alliance, October 2016
Ex-1059	“Overview of the Media Foundation Architecture,” Microsoft Learn, https://learn.microsoft.com/en-us/windows/win32/medfound/about-topologies (accessed Mar. 2026)
Ex-1060	March 11, 2026 Deposition Transcript of Dr. Michael C. Brogioli for IPR2025-00597 and IPR2025-00598
Ex-1061	ClickShare C-5 datasheet
Ex-1062	Declaration of Dr. Kevin C. Almeroth in Support of Petitioner's Reply

I. INTRODUCTION

Patent Owner's Response fails to overcome Petitioner's demonstration that claims 1-20 of U.S. Patent No. 11,966,346 ("the '346 Patent") are unpatentable as obvious. The Board should find all challenged claims unpatentable. Ex-1062, ¶¶8.

Patent Owner advances eight principal arguments: (1) that Petitioner improperly relies on peripheral device features for peripheral-less embodiments; (2) that Dinka teaches away from the claimed invention; (3) that there is no motivation to combine; (4) that the prior art does not teach data transformations "based on a type of functional data"; (5) that Petitioner indiscriminately relies on primary and secondary dockees in Van de Laar; (6) that Ground 2 fails to teach a "driver"; (7) that Kaplan's "walled garden" is incompatible with Van de Laar; and (8) that secondary considerations of non-obviousness support patentability. Each argument fails for the reasons below.

II. GROUND 1: BEEL-DINKA-CHRISTISON

A. Petitioner Properly Relies on Beel's Peripheral-Less Embodiments

1. Beel Expressly Teaches Software Migration to the Processing Device to "*Interact Directly with the Base Unit...*"

Patent Owner argues that Petitioner "indiscriminately relies" on peripheral device features while relying on Beel's third and fourth embodiments, which exclude peripheral devices. POR, 16-21. This argument misunderstands Beel's disclosure.

Beel's third and fourth embodiments expressly teach that software functions previously performed on the peripheral device can migrate to the processing device. In the third embodiment, the portable application is stored on "a USB memory stick," and "[t]his embodiment...routes at least screen scraped data presented by client software running on the processing device for transfer to a communications network via a network connection of the processing device." Ex-1005, ¶221. Critically, Beel's third embodiment uses the processing device's own transmitter. Dr. Brogioli confirmed this, acknowledging that paragraph 216 states "the system needs to use the transmitter/receiver from the client processing device" because the USB memory stick has "no input device, visual indicator, or transmitter." Ex-1060, 57:22-58:8. The fourth embodiment, "Software Only Client Installed on the Client Processing Device," is "similar to the third embodiment, with as only difference that the software is copied on the client operating device." Ex-1005, ¶247. Both embodiments use the same screen sharing software but "*interact directly with the base unit*" rather than through a peripheral device. Ex-1062, ¶¶9-11.

Patent Owner dismisses these embodiments as comprising "less than one page" of Beel's disclosure. POR at 16. Beel teaches that software functions-encoding, packetization, screen scraping, and presentation-can be performed directly on the processing device. Ex-1062, ¶10.

2. The Software Functions Are Performed on the Processing Device

Patent Owner ignores that Beel repeatedly describes software “for execution on the processing device.” Ex-1005, ¶¶64, 68, 71-72. Beel discloses “executable software code ... stored for execution on the processing device” including “code for providing a means for receiving, decrypting and decoding incoming arbitrary media content” and “code for scaling of incoming arbitrary media streams.” *Id.* Dr. Brogioli confirmed that in Beel’s third embodiment, “the execution of the software would ultimately be the execution of instructions on the Intel processor in the...Windows laptop.” Ex-1060, 49:15-20. When asked whether the instructions “would be executed on the processor of the processing device,” Dr. Brogioli answered: “As far as I recall, that sounds correct.” Ex-1060, 49:21-50:1. These software functions operate identically whether stored on a peripheral device, USB stick, or the processing device itself. Ex-1062, ¶12.

Beel’s “zero footprint” portable application reinforces this. Beel teaches that “[i]f autorun is enabled, then the computer will automatically execute the client software (7) stored in mass storage (8) on the peripheral device.” Ex-1005, ¶208. Once launched, the application executes on the processing device, the peripheral device serves only as a storage mechanism. *Id.* Ex-1062, ¶11.

3. Dr. Brogioli's Testimony Is Evasive and Unreliable

Patent Owner's reliance on Dr. Brogioli's opinions should be viewed skeptically given his evasive testimony. Dr. Brogioli repeatedly refused to answer basic technical questions unless he could read verbatim from his declaration. When asked whether Figure 7 of Beel illustrates a peripheral device, he could not give a yes-or-no answer despite extended questioning-even though Beel paragraph 100 explicitly states "Figure 7 shows a peripheral device." Ex-1060, 38:18-44:9. Similarly, Dr. Brogioli testified that mass storage devices are endpoints under the USB specification (Ex-1060, 97:10-98:1, 114:17-22), yet insisted Beel's mass storage device is not an endpoint because "Beel does not mention endpoints at all." Ex-1060, 106:2-108:10, 107:2-5, 108:9-10, 109:11-24. Ex-1062, ¶¶55-57, 63-64.

Dr. Brogioli's double standard is exposed by his endpoint analysis. He testified that ClickShare's webcam is an endpoint "exposed via a USB." Ex-1060, 146:1-3. But when asked why Beel's webcam is not also an endpoint, his only answer was "Beel doesn't talk about endpoints," even though ClickShare also does not use that word. Ex-1060, 146:15-24. Dr. Brogioli applies different standards to prior art than to Barco's own products. Ex-1062, ¶¶57, 64.

Dr. Brogioli also had "no opinion" on: (1) whether operating systems present devices to applications without drivers (Ex-1060, 78:1-12, 149:14-150:1); (2) what "translating" means in the '346 patent context (Ex-1060, 125:6-25); (3) what

“interpreting” or “encoded” mean (Ex-1060, 126:1-16, 132:5-133:20); (4) whether endpoints must be either fixed or configurable (Ex-1060, 115:16-116:23); and (5) technical challenges a POSITA would face using a WiFi interface (Ex-1060, 60:1-62:5). The Board should give little weight to such testimony. Ex-1062, ¶¶56, 58, 65-66.

B. Dinka Does Not Teach Away

1. The Board Already Rejected This Argument

The Institution Decision rejected Patent Owner’s teaching-away argument:

“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.”)

ID at 19. Patent Owner presents no new evidence or argument that disturbs this finding.

2. Dinka Identifies the Same Problem—Not a Different Direction

Patent Owner argues that Dinka “actively discourages” using laptops for VoIP calls, citing Dinka’s statement that laptop users must be “sufficiently technically

competent to download, install, and operate” VoIP software. POR, 30-31; Ex-1006, 2:4-8. This mischaracterizes Dinka and misapplies teaching-away doctrine.

Dinka identifies the same problem as the '346 Patent: laptops have inadequate built-in functional devices for conferencing. Ex-1001, 1:37-39; Ex-1006, 2:15-18. The '346 Patent expresses a “need” for—but does not claim—higher-quality functional devices. Dinka proposes embedding computer-like functionality into televisions. Ex-1006, 1:37-54, 2:19-24. A reference does not teach away merely by proposing a different solution to the same problem. *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004). Critically, Dr. Brogioli admitted he does not “recall specifically that Dinka is making the statement that a VoIP call would be nonfunctional between two laptops.” Ex-1060, 99:14-17. Dinka never states that laptop-based VoIP is technically unworkable. Moreover, Dinka expressly discloses “a plurality of computer terminals 102.” Ex-1006, FIG. 1, 5:45-46. Ex-1062, ¶¶27-29.

3. Dr. Brogioli Concedes Dinka Teaches Processing Device Embodiments

Dr. Brogioli conceded that Dinka discloses processing device embodiments. Ex-1060, 98:14-102:4. Confronted with Dinka’s disclosure of “a plurality of computer terminals 102” for VoIP communication (Ex-1006, 5:45-46, FIG. 1), Dr. Brogioli acknowledged Dinka “talks about...computers connected...over a packet-based computer network such as the internet” for voice and video calls. Ex-1060,

102:8-24. Dinka also states that VoIP is “most commonly accessed using a personal computer.” Ex-1006, 2:1-4. Ex-1062, ¶¶30, 61.

Patent Owner cites *Chemours Co. FC, LLC v. Daikin Indus., Ltd.*, 4 F.4th 1370 (Fed. Cir. 2021), for the proposition that teaching away exists when a reference “discourages” the claimed approach. POR at 31. But Dinka merely acknowledges that PCs are the most common VoIP platform, identifies certain user-experience limitations, and proposes an alternative. This is a far cry from “criticizing” or “discrediting” PC-based VoIP. Ex-1062, ¶¶28-29.

C. Petitioner Establishes Motivation to Combine

1. The Board Found Rational Underpinning

Patent Owner argues that Petitioner fails to articulate why a POSITA would combine Beel, Dinka, and Christison. POR at 28-30. But the Board already found Petitioner's motivation to combine sufficient. ID, 21-23. The Board specifically found that Dinka would improve Beel's similar system and that the combination would yield “predictable results.” *Id.*, 17. Ex-1062, ¶¶31-34.

2. The '346 Patent Admits Skype Was Known and Dinka Improves Beel by Providing a Known Example of “Unified Communication”

The '346 Patent itself admits that Skype was a known unified communications tool. Ex-1001, 3:1-9 (summary of the invention describing tools for unified communications, such as Skype). This Applicant-Admitted Prior Art establishes that

a POSITA would have been aware of and motivated to incorporate VoIP functionality into Beel's presentation system. Ex-1062, ¶32.

3. A POSITA Would Have Combined Beel and Dinka to Achieve Predictable Results

The Petition explained how and why the POSITA would have found it obvious to combine Beel and Dinka. Pet., 23–25. Both disclose systems where processing devices connect to functional devices (cameras, microphones, speakers) for electronic meetings. Beel describes cameras 39-41, microphones 38, and speakers attached to base node 36. Ex-1005, ¶120. Dinka describes computer terminals with “communication client application 110,” “audio transceiver 111,” and “webcam 112” for voice/video calls. Ex-1006, 6:7-13, 6:34-37. Ex-1062, ¶32.

Both references enable users to participate in audio/visual conferences using functional devices. Ex-1005, ¶¶85-89, 122. Dinka's “*unified communication*” application—Skype—would have been one obvious application to run on Beel's web conferencing system. Ex-1002, ¶132. The '346 Patent admits Skype was known for unified communications. Ex-1001, 7:66-8:21. Combining Beel with Dinka's Skype functionality would have been applying a known technique to a known system for predictable results. Ex-1002, ¶117. Ex-1062, ¶¶32-33.

4. Consistent Arguments Across Related Patents Support Obviousness

Patent Owner criticizes Petitioner for using “nearly identical” motivation arguments for different patents in the family. POR at 35. But this consistency supports obviousness; the same combination works for both peripheral-based and peripheral-less embodiments because the underlying technology is the same. That Petitioner’s analysis applies broadly demonstrates the naturalness of the combination, not improper hindsight. Ex-1062, ¶¶33.

D. The Combination of Beel, Dinka, and optionally Christison Teaches, “*wherein the Base Unit, via the Transmitter, Is Configured to Transmit Data over the Wireless Connection to the Processing Device.*”

1. Dr. Brogioli Improperly Attacks Beel in Isolation

Patent Owner alleges that references to peripheral-device embodiments “do not relate to the Third Embodiment or Fourth Embodiment” but ignores the fact that Beel explains the embodiments are essentially the same. Ex-1005, ¶247 (the “only difference that the software is copied on the client operating device.”); Ex-1062, ¶¶35-36.

But this argument improperly attacks Beel individually without accounting for Petitioner’s combination of Beel with Dinka. The Board addressed this exact issue at institution:

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, 24 (citing Ex-1005, ¶¶71-72, 120). The Board further noted, “[E]ven 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” through Dinka’s bidirectional communication. ID, 25. Dinka’s disclosure is also consistent with Beel’s “summary of the invention” discussing “electronic meeting systems,” “web conferencing systems” and “data conferencing” for “screen sharing and voice conferencing” so that “a screen, keyboard, mouse, camera, etc. can be shared.” Ex-1005, ¶¶85, 87-88. Ex-1062, ¶¶37-40. Dr. Brogioli ignores this entirely.

E. The Prior Art Teaches, “*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 Device*”

Patent Owner’s argument rests on two contentions: (1) that Beel’s disclosure of virtual devices in paragraphs 71-72 and 313-317 is limited to peripheral device embodiments and cannot be attributed to peripheral-less embodiments; and (2) that Christison’s WUSB Hub presents devices as “native” through the hub itself rather than through client software or a driver on the processing device. Ex. 2004, ¶¶108-109. Both contentions fail.

1. Beel's Virtual Device Functionality Is Software-Based and Executes on the Processing Device

Beel's paragraphs 71-72 describe "executable software code...stored for execution on the processing device." Ex-1005, ¶71. The peripheral device serves only as a storage and transport mechanism—actual software execution, including virtual device presentation, occurs on the processing device. *Id.*, ¶208; Ex-1062, ¶¶41-42.

Beel's fourth embodiment teaches that this same software can be "copied on the client operating device" without any peripheral device. *Id.*, ¶247. Dr. Brogioli acknowledged that Beel's portable application "goes on the client operating device" in the fourth embodiment and confirmed "[n]o plug-and-play port such as the USB port...required on the client operating device." Ex-1060, 45:3-46:1. He could not identify any technical reason why the executable codes in paragraphs 71-72 "could not be implemented using software on the client device." Ex-1060, 34:6-35:23. The software functions are identical; only the storage location differs. Ex-1005, ¶¶215-216, 247, 313. Ex-1062, ¶¶43, 60, 63.

Beel describes the a "functional device" appearing to the operating system "as a composite device comprising for instance a (virtual) audio speaker device." *Id.*, ¶317. The processing device's OS recognizes the virtual audio device through its pre-installed generic drivers, such as the UAC driver. *Id.*, ¶¶43, 312, 319. When the software migrates directly to the processing device in the fourth embodiment, a

POSITA would have understood that the same virtual device presentation is achieved through the client software and driver running on the processing device. Ex-1062, ¶¶41-43.

2. Christison Reinforces Virtual Device Presentation Through Host Interaction

Dr. Brogioli argues that Christison is “insufficient” because its Proxy WUSB Hub “present[s] wired USB devices 1010, 1020 as if they are 'native' WUSB devices” through hub hardware rather than through client software or a driver on the processing device. Ex. 2004, ¶109. This argument ignores how USB devices interact with host computers.

Christison's system obviously involves drivers on the host processing device. When its WUSB Hub presents wired USB devices as “native” WUSB devices, the host's OS recognizes them through USB drivers. Ex-1011, 6:17-19, 6:24-26. For devices to “appear to the host system as if they were native” (Ex-1011, 6:25-26), the OS must load the appropriate driver. Ex-1062, ¶¶16-17; *see also* Ex-1060, 82:24-83:18 (Dr. Brogioli stating he has no opinion on whether or not Christison discloses a “virtual USB device”). Dr. Brogioli acknowledges that Christison's device driver 202 is “driver software that's running on the host.” Ex-1060, 83:1-2. No device is presented to an OS without a driver.

Patent Owner improperly attacks Christison in isolation rather than addressing the combination. Petitioner relies on Christison to demonstrate the obviousness of

presenting remote functional devices as virtual devices—supplementing Beel's express disclosure of virtual audio devices. Ex-1005, ¶¶313-317. In the combination, Beel's client software provides the framework for virtual device presentation, while Christison's teaching of "native" remote devices reinforces obviousness. Ex-1002, ¶¶118-119, 138-139. Ex-1062, ¶34.

F. The Prior Art Teaches “*wherein the Client Software Is further Configured to Provide Data Transformations Based on a Type of Functional Data from at Least One Functional Device to the Processing Device*”

1. Type-Specific Codecs Are Expressly Disclosed

Patent Owner argues that Beel and Dinka do not teach performing data transformations “based on a type of functional data.” POR at 24-27. This argument is meritless. Beel expressly discloses type-specific transformations: “The video signal is then encoded in a video encoder 3, packetized in a video packetizer 4.” Ex-1005, ¶320. “Audio is...optionally encoded into for instance Orgg/Vorbis [*sic*].” Ex-1005, ¶314. Dr. Brogioli confirmed that Beel's “video encoder can encode video data using a video codec, and audio data using an audio codec” and acknowledged that “a client PC...could run an audio encoder” to “encode a .wav file to mp3.” Ex-1060, 77:5-25. Dinka likewise discloses type-specific transformations: “Voice engine” encoding for speech signals. Ex-1006, 9:32-42. Video codecs for visual data. Ex-1006, 9:45-50. Using a video codec for video data and an audio codec for

audio data constitutes performing transformations “*based on a type of functional data*.” Ex-1062, ¶¶19-21.

2. Patent Owner's Own Prosecution History Confirms This Understanding

During prosecution, Barco stated “the data transformations are related to the functional data of the functional device, e.g., the images for a camera, the audio data for a microphone.” Ex-1004, 1038. This is exactly what Beel and Dinka teach—using video encoders for video (camera) data and audio encoders for audio (microphone) data. Patent Owner cannot now argue that type-specific codec use does not constitute transformations “*based on a type of functional data*” when Barco itself defined the limitation in precisely these terms during prosecution. *Id.* Ex-1062, ¶25.

3. Dr. Almeroth's Testimony Is Consistent

Patent Owner attempts to impeach Dr. Almeroth by quoting his deposition testimony that “data is data” and suggesting this contradicts his opinion that transformations are type-specific. POR at 24-25. This mischaracterizes Dr. Almeroth's testimony. Dr. Almeroth's “data is data” statement referred to transfer channels, the medium through which data flows. His declaration separately addresses transformations, *e.g.*, encoding/decoding operations performed on data. These are distinct concepts: Ex-1062, ¶¶20-21.

Transfer channels: Data-agnostic (the communication medium doesn't care what data type is being transmitted)

Transformations: Data-type specific (video codecs for video, audio codecs for audio)

Dr. Almeroth's declaration clearly explains: "Transformations 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. There is no inconsistency. Ex-1062, ¶¶19-21, 26.

4. Dr. Brogioli's Counter-Argument Is Technically Unsound

Dr. Brogioli argues that "[w]hile different types of data can be encoded differently, they can also be encoded the same way." Ex. 2004, ¶111. This misses the point entirely. The claim requires transformations "*based on a type of functional data*," not that all data must be transformed differently. The existence of type-specific encoders in Beel and Dinka satisfies this limitation. Ex-1062, ¶24.

Dr. Brogioli does not dispute that Beel uses a "video encoder" for video and "Orgg/Vorbis [*sic*]" for audio, he merely argues this doesn't meet the claim limitation. Ex. 2004, ¶¶108-112. This is a legal argument divorced from the technical reality that different encoders are being applied based on data type. Ex-1062, ¶¶22-23, 59.

Patent Owner argues the cited transformations flow from processing device to base node, not vice versa. POR at 23. But the combination with Dinka teaches

bidirectional communication (Ex-1006, 6:12-13, 6:34-37), and type-specific codecs would obviously apply in both directions. Ex-1062, ¶¶22-26.

G. Van de Laar renders obvious “*the processing device being configured to host the Unified Communication between two or more other processing devices*”

Patent Owner misconstrues Van de Laar's disclosure. POR at 40-43. The claim requires the processing device to be “*configured to host*” the unified communication—not that it perform all routing functions. Van de Laar discloses that primary dockees run Skype locally. Ex-1007, ¶128. The WDH facilitates data transmission but does not replace the dockee's role as UC host. Ex-1062, ¶¶53, 86-88.

Moreover, Patent Owner's argument that Skype and Miracast are “different protocols” that cannot be used simultaneously misses the point. POR at 43. The claim neither requires nor prohibits simultaneous use of multiple protocols. Van de Laar teaches that a dockee can use Skype for unified communications (Ex-1007, ¶128) and separately receive simulated peripherals (*Id.*, ¶¶54, 93). A POSITA would understand that these functions can coexist on the same device. Ex-1062, ¶¶83-85.

H. Dependent Claims Are Obvious:

Claims 2 and 12: “*Simulated Speakerphone*”

Claims 3 and 13: “*Simulated Videocam*”;

Claim 5: “*Video Data Received from the Base Unit*”;

Claim 6: “*Decoding and Compositing or Decrypting the Video Data*”

Beel discloses a “(virtual) audio speaker device” presented to the processing device’s operating system through “pre-installed generic drivers.” Ex-1005, ¶¶317. Beel also discloses microphones 38 connected to the base node that transfer audio to processing devices. Ex-1005, ¶¶120, 317, 320. Dr. Almeroth explained that Beel’s “client software on the processing device [including] pre-installed generic drivers” for communicating to “a (virtual) audio speaker device” and “microphones” constitutes a “simulated speakerphone.” Ex-1002, ¶147 (citing Ex-1005, ¶¶120, 137, 317); Ex-1062, ¶44.

Patent Owner argues Beel lacks a “virtual microphone.” POR at 26. But Beel’s microphone is a virtual audio device. Ex-1005, ¶¶120, 317. A POSITA would understand that the same driver-based presentation mechanism applies to all functional devices. Ex-1062, ¶44.

Beel’s base node includes cameras 39-41 linked to the base node via network 51, and “client software on the processing device [including] pre-installed generic drivers” for communicating with the cameras via a wireless transceiver. Ex-1005, ¶¶119-121, 129, 148, 288. Beel’s software includes “code for providing a means for receiving, decrypting and decoding incoming arbitrary media content.” Ex-1005, ¶¶71-72. Beel Figure 11 illustrates a base unit with a “video decode” block 26 and a “compositor” block 29, confirming that Beel expressly teaches “decoding and

compositing” video data. Ex-1005, ¶322. Moreover, in the combination with Dinka, bidirectional video communication is expressly taught. Ex-1006, 6:12-13, 6:34-37. The combination renders obvious presenting functional devices as native devices for Beel’s “electronic meeting systems.” Ex-1005, ¶¶85-89, 122. Ex-1062, ¶¶45, 73-78.

1. Claims 10 and 20: *Fixed or Configurable Endpoints*

Patent Owner again ignores Beel’s fourth embodiment. Petitioner discussed this argument in § II.E.1, *supra*. Ex-1062, ¶¶41-43.

2. Claims 21 and 22: *“Presenting the First Display Device to the Processing Device”*

Patent Owner notes that the Petition relies on peripheral device embodiments for Claims 21 and 22. POR at 19. This argument fails for the same reasons explained in Section II.A: The combination with Dinka additionally reinforces bidirectional communication enabling display data to flow to the processing device. Ex-1006, 6:12-13. Ex-1062, ¶¶68-72.

III. GROUND 2: KAPLAN-VAN DE LAAR-CHRISTISON

A. Petitioner’s Reliance on Primary and Secondary Dockees Is Appropriate because Van de Laar Teaches a Flexible Dockee Architecture

Patent Owner argues that Petitioner “indiscriminately” relies on both primary and secondary dockees from Van de Laar without reconciling their different capabilities. POR at 37-42. The Board noted this as a “legitimate concern” at institution. ID at 26. However, Patent Owner ignores Van de Laar’s teaching that a

dockee may change its primary or secondary status, or operate as both a primary or secondary dockee at the same time.

1. The Cited Dockees Operate as Both Primary and Secondary

Van de Laar teaches that dockees can switch roles and perform overlapping functions. Primary and secondary dockees both have read permissions (Ex-1007, ¶¶93), multiple primary dockees can connect simultaneously, and each can both send and receive AV data. Ex-1007, ¶¶59-60, 93. Dr. Brogioli confirmed dockees “can switch roles between primary and secondary and vice versa.” Ex-1060, 85:17-92:24. Ex-1062, ¶¶46-48.

2. Dockees Can Transition Between Roles, and Primary Dockees Can Simultaneously Act as Secondary Dockees

In the proposed combination, the processing device operates as a primary dockee (with control privileges and Skype functionality, along with the same read privileges that secondary dockees have) while also receiving simulated peripherals (virtual functional devices). Pet. 45-46, 54-56, 59-60, 77-78, 93, 96, 123; Ex-1007, ¶¶54, 59-60, 93, 96, 123. There is no “indiscriminate” use; Van de Laar teaches that dockees access multiple functionalities regardless of their designation. Ex-1062, ¶¶47-48, 52.

B. The Combination of Kaplan and Van de Laar Render Obvious “*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”

1. The '346 Patent Admits Drivers Are Standard.

Patent Owner argues that “neither the Petition, nor Dr. Almeroth, mention the word driver” in arguing the relevant limitation. POR at 39. But the '346 Patent itself admits that “a driver is standard for the operating system and can drive a standard class of peripheral devices.” Ex-1001, 8:53-67. Ex-1062, ¶¶13-18, 80.

Operating systems necessarily include drivers to interface with peripherals—whether physical or virtual. Dr. Brogioli confirmed that pre-installed generic drivers for WiFi interfaces were well-known at Beel's priority date and that “the person of skill in the art would be aware of the use of these types of drivers.” Ex-1060, 63:16-64:19. When a simulated peripheral is presented to an application like Skype, the operating system uses a driver to interface between the simulated device and application. Ex-1062, ¶¶14-15.

2. Kaplan Uses Standard Operating Systems with Standard Pre-Installed Generic Drivers.

Kaplan discloses that the processing device runs standard operating systems including Windows®. Ex-1008, ¶¶47-49. Standard operating systems necessarily use drivers—including USB drivers—to communicate with peripheral devices, as Kaplan's system relies on USB connectivity and automatic software installation. Ex-1008, ¶¶17, 45, 47-49. Ex-1062, ¶51.

3. Dr. Brogioli's Contrary Opinion Defies Technical Reality

Dr. Brogioli opines that “operating a simulated peripheral does not necessarily require using a driver.” Ex. 2004, ¶152. But he could not “identify any real-world operating systems where a simulated peripheral is presented to an application without any driver involvement” and admitted he has not “done a breakdown of features driving commercial success” or “performed that analysis from the OS level.” Ex-1060, 143:1-9, 149:18-150:1, 151:12-15. His inability to identify any real-world operating system functioning without drivers undermines his credibility on this issue. Ex-1062, ¶58.

C. Kaplan's “Walled Garden” Embodiment Does Not Prohibit Combination with Van de Laar.

1. Kaplan Discloses Non-Walled-Garden Embodiments.

Patent Owner argues that Kaplan's “walled garden” approach—where transmitter and receiver are pre-paired at the factory—is incompatible with Van de Laar's flexible Wi-Fi Direct pairing. POR, 52-55. This argument improperly limits Kaplan to a single embodiment.

Kaplan identifies “walled garden” as merely one embodiment, not a requirement: “**Embodiments of** the present invention provide a ‘walled garden’ approach.” Ex-1008, ¶21 (emphasis added). Dr. Brogioli confirmed he has “no opinion one way or the other whether Kaplan includes embodiments that do not require a ‘walled garden’ approach.” Ex-1060, 113:6-114:5. Kaplan also states

“[s]teps may be added or removed depending on the particular applications” and references “commercially available wireless communications standards.” Ex-1008, ¶¶31, 54, 56. Ex-1062, ¶50.

Federal Circuit precedent prohibits limiting prior art to preferred embodiments. *Honeywell Int’l Inc. v. 3G Licensing, S.A.*, 124 F.4th 1345, 1355-56 (Fed. Cir. 2025) (“We have long recognized that obviousness does not require that a particular combination must be the preferred, or the most desirable, combination described in the prior art in order to provide motivation for the current invention.”) (internal quotation and citations omitted).

2. KSR Allows Provides “an Expansive and Flexible Approach to the Obviousness Question.”¹

KSR holds that “a person of ordinary skill has good reason to pursue the known options within his or her technical grasp.” 550 U.S. at 421. A POSITA would have recognized that Kaplan’s USB transmission teaching could be combined with Van de Laar’s multi-device WDH functionality without adopting every aspect of either reference. Ex-1062, ¶82.

The proposed combination takes Kaplan’s teaching of wireless transmission from a processing device to a receiver/base unit and modifies the receiver with Van

¹ 550 U.S. at 1731

de Laar's WDH functionality, enabling multiple processing devices to access virtual functional devices. This is exactly the type of predictable improvement *KSR* contemplates. Ex-1062, ¶¶81-82.

3. Van de Laar Provides Motivation to Modify Kaplan

Van de Laar's ability to connect multiple dockee devices provides clear improvement over Kaplan's single-transmitter approach. Ex-1007, ¶¶52-55. A POSITA would have been motivated to incorporate Van de Laar's multi-device capability into Kaplan's wireless presentation system to enable conferencing with multiple participants, the stated purpose of the '346 Patent. Ex-1062, ¶¶81, 82.

D. Dependent Claims Are Obvious:

Claims 2 and 12: “*Simulated Speakerphone*”

Claims 3 and 13: “*Simulated Videocam*”;

Claim 5: “*Video Data Received from the Base Unit*”;

Claim 6: “*Decoding and Compositing or Decrypting the Video Data*”

Claims 7 and 16 (Functional Device Types)

Patent Owner argues that the dependent claims under Ground 2 fail because Petitioner relies on features of the secondary dockee for virtual device presentation while relying on the primary dockee for Skype functionality. POR at 45-47. As explained above, Van de Laar teaches that dockees can operate as both primary and secondary simultaneously, accessing all functionalities regardless of their designation. Ex-1007, ¶¶59-60, 93. Ex-1062, ¶¶46-48, 52.

Claims 2, 3, 12, and 13 (Simulated Speakerphone and Videocam): Van de Laar discloses that the WDH offers “simulated peripheral[s] (e.g. simulated webcam)” to dockees. *Id.*, ¶¶54, 93. Because a dockee can have both primary functionality (Skype) and secondary functionality (receiving simulated peripherals) simultaneously, the combination renders these claims obvious. Ex-1062, ¶¶44-45, 49.

Claims 5 and 7 (Video Data and Functional Device Types): Van de Laar discloses that dockees receive video data from the WDH, including “video and/or audio stream[s] representing the video and/or audio output.” *Id.*, ¶96. The functional devices include “display devices, audio devices, webcams.” *Id.*, ¶73. Patent Owner’s argument that these claims fail because they rely on secondary dockee features ignores Van de Laar’s flexible architecture. Ex-1062, ¶¶47, 52.

Patent Owner argues these claims fail due to reliance on secondary dockee features. POR at 46. Van de Laar discloses functional devices including “webcams” and “audio devices” (Ex-1007, ¶73), and dockees access these regardless of primary/secondary designation, as required by claims 7 and 16. Ex-1007, ¶¶59-60, 93. Ex-1062, ¶¶46-48.

Patent Owner argues that Kaplan and Van de Laar do not teach “*data transformations based on a type of functional data.*” POR at 43-44. This argument fails. Van de Laar expressly discloses that “the WDH may scale the audio/video data

to constrain bandwidth” and that data may be “scaled and/or transcoded” Ex-1007, ¶¶56, 126. Kaplan discloses scaling video content based on display capabilities. Ex-1008, ¶32. A POSITA would understand that scaling video data differently than audio data constitutes transformations “*based on a type of functional data*” because the codecs for each are different. Ex-1062, ¶¶19-26, 54.

Patent Owner argues the data transformations in Van de Laar occur at the WDH, not through client software. POR at 44-45. But client software initiates and controls data transmission; the claim does not require transformations occur exclusively within client software. Ex-1062, ¶54.

1. Claims 9 and 18 (Virtual Functional Device Presented to the Unified Communication):

Patent Owner argues that Claims 9 and 18 fail due to improper reliance on Van de Laar’s Skype disclosure. POR at 46. As explained above, Van de Laar teaches that primary dockees can run Skype (Ex-1007, ¶128) while also receiving simulated peripherals that function as virtual functional devices (*Id.*, ¶¶54, 93). The virtual functional device (simulated peripheral) is presented to the unified communication (Skype) running on the same processing device. Ex-1062, ¶49.

IV. SECONDARY CONSIDERATIONS DO NOT OVERCOME OBVIOUSNESS

A. The Crestron License Lacks Nexus

Patent Owner argues that Crestron's license demonstrates industry recognition of the '346 Patent's value. POR at 58-62.

The Crestron license covers multiple patents from three patent families and includes international rights. Unlike *Ancora Technologies, Inc. v. Roku, Inc.*, 140 F.4th 1351, 1362 (Fed. Cir. 2025), where the challenged patent was “the only patent identified,” the Crestron license deals with numerous patents, diluting any probative value. Indeed, Barco's own director testified that each patent is “independently valuable.” Ex-2031, 141:20-143:18. Patent Owner's reliance on *Ancora* is misplaced because *Ancora* involved a single patent as the sole subject of the license; here, Crestron licensed an entire portfolio. Moreover, Barco's own damages expert testified the agreement was driven by “business” factors, and Mr. Ludke of Crestron testified it resulted from “mutual business interests,” not recognition of patent validity. Ex-1062, ¶¶93-95. The timing of Crestron's license (before product launch) reflects routine business risk mitigation, not acquiescence to the validity of any specific claim.

B. Commercial Success Lacks Nexus

Patent Owner argues that ClickShare's commercial success demonstrates non-obviousness. POR at 58-62. But it fails to establish nexus between the commercial success and the claimed features. Ex-1062, ¶¶89-91.

1. Barco's Products Include Significant Unclaimed Features

ClickShare base units include significant unclaimed features that likely drive commercial success. Ex-1061 (ClickShare C-5 datasheet) reveals: (1) "smooth experience with Microsoft Teams or Zoom" requiring specific processor specifications; (2) native BYOD protocols including Airplay, Google Cast, and Miracast; (3) cloud management and reporting capabilities; (4) WPA2-PSK and IEEE 802.1X enterprise security authentication; and (5) standalone mode operation. None of these features are recited in the challenged claims. Dr. Brogioli admitted he has "not done a breakdown of features driving commercial success" and "hasn't analyzed" whether unclaimed features drive sales. Ex-1060, 141:24-143:9. The presumption of nexus applies only where the product "embodies the claimed features, and is coextensive with them." *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019). Barco's products embody far more than the claimed invention, and Patent Owner. Dr. Brogioli does not "talk about commercial success" in his declaration. Ex-1060, 143:1-9. He further admitted he hasn't analyzed what the "standalone mode" language in ClickShare documentation means, or whether

unclaimed features like Teams or Zoom compatibility might be driving commercial success. Ex-1060, 142:19-143:4. Barco presents no evidence separating revenue attributable to claimed versus unclaimed features. Ex-1062, ¶¶62, 67, 89-92.

C. Secondary Considerations Cannot Overcome Strong Prima Facie Case

Even if Patent Owner could establish some quantum of secondary considerations evidence, it would be insufficient to overcome Petitioner's strong prima facie case of obviousness. The prior art expressly teaches every limitation of the challenged claims through straightforward combinations. Secondary considerations are "not significant enough as a matter of law to make it non-obvious" where, as here, "they do not necessarily control the obviousness conclusion." *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1370-72 (Fed. Cir. 2007).

V. CONCLUSION

Petitioner respectfully requests that the Board find claims 1-20 of U.S. Patent No. 11,966,346 unpatentable.

Dated: March 31, 2026

Respectfully submitted,

/Stephen Yang/
By: Stephen Yang
Reg. No. 70,589
Lead counsel for Petitioner

CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(d), the undersigned hereby certifies that the word count for the foregoing response totals 5,595 as counted by Word Count feature of Microsoft Word, which is less than 5,600 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: March 31, 2026

By: /Stephen Yang/
Reg. No. 70,589
Attorney for Petitioner

CERTIFICATE OF SERVICE

I hereby certify that on January 13, 2026, I caused a true and correct copy of the foregoing response to be served via Federal Express mail on the Patent Owner at the following correspondence addresses of record:

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