

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 N.V.,

Patent Owner.

CASE: IPR2024-01438

U.S. PATENT NO. 11,258,676

DECLARATION OF MICHAEL C. BROGIOLI, Ph.D.

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I, Dr. Michael C. Brogioli, declare as follows:

1. I am over eighteen years of age, and I am competent to testify regarding the matters set forth in this declaration if called upon to do so.

2. I have been retained in this matter by K&L Gates LLP on behalf of Patent Owner, Barco NV (“Barco”).

3. I am being compensated at my standard consulting rate for my time spent on this matter through Elysium Digital LLC, who I understand charges \$950 per hour of my time. My compensation is not contingent upon the testimony I provide or the outcome of this matter. I submit this declaration at the request of K&L Gates as counsel for Patent Owner in this proceeding.

4. I understand that Yealink (USA) Network Technology Co., Ltd., and Yealink Network Technology Co., Ltd. (collectively, “Petitioner”) and its expert, Dr. Kevin C. Almeroth, have submitted papers in this proceeding arguing that Claims 1, 4, 5, 8, 14, 16, and 18 to 20 (the “Challenged Claims”) of U.S. Patent No. 11,258,676 (the “’676 Patent”) (Ex. 1001) are unpatentable under the United States Patent and Trademark Office’s *inter partes* review standard of a preponderance of the evidence. I provide certain technical opinions regarding the scope and content of the prior art, including how those skilled in the art as of 2011 would have understood certain references, the industry as a whole, and what factors were driving innovation

in this space. Petitioner and Dr. Almeroth have not challenged the other claims of the '676 Patent.

5. In preparing this declaration, I have analyzed the '676 Patent (Ex. 1001), its file history (Ex. 1004), the declaration of Dr. Kevin C. Almeroth (Ex. 1002), and several prior art references, including Ono (Ex. 1005), Uchida (Ex. 1009), Deforche (Ex. 1030), and Grimshaw (Ex. 1012). I also considered the other documents or references cited in this declaration.

6. In forming the opinions expressed below, I have considered the documents listed above, the relevant legal standards as provided to me by counsel, and my own knowledge and experience. My opinions are offered from the perspective of a person of ordinary skill, as that term is defined, as of September 14, 2011.

7. I understand Dr. Almeroth has already provided his opinions in Exhibit 1002; however, if he is permitted to offer additional opinions, I reserve my right to respond to those should I be asked.

I. QUALIFICATIONS AND BACKGROUND

8. Below is a summary of my education and experience. My *curriculum vitae* ("CV"), provided as Exhibit 2005 provides additional context regarding my professional background, experience, publications, patents, and other qualifications

relevant to providing expert opinions. Here, I highlight experiences that are relevant to the technology described in the patent at issue.

9. I am currently an Adjunct Professor of Electrical and Computer Engineering at Rice University in Houston, Texas, and Managing Director of Polymathic Consulting in Austin, Texas. I received my Bachelor of Electrical Engineering from Rensselaer Polytechnic Institute in 1999, my Master of Science in Electrical and Computer Engineering from Rice University in 2003, and my Doctorate of Electrical and Computer Engineering from Rice University in 2007.

10. While at Rice University, I developed various computer architecture designs for embedded and high-performance systems, including multi-core and low power systems used in processing various workloads, including multimedia and other workloads. For example, from 1999 to 2003, I worked in the area of low-power computing, specifically focusing on dynamic power management and performance of configurable computing and memory systems with workloads, including multimedia and signal processing. From 2002 to 2004, I developed Spinach, a computer architecture design and modeling toolset, which models system components common to all programmable computing environments, including memory systems, multi-core microprocessor systems, and related hardware components. These systems targeted networking hardware and software solutions. From 2004 to 2009, I developed Spinach DSP-FPGA, a modular and composable

simulator design infrastructure for programmable and reconfigurable embedded SOC architectures specifically targeting mobile, low-power, and embedded and portable computing devices running networking and multimedia workloads. From 2005 to 2009, I developed and published a retargetable compiler infrastructure and hardware design exploration toolkit for systems microprocessor design, which facilitated the design space exploration of microprocessors and multi-core processor designs. Many of these tools have been used at United States universities in the area of electrical and computer engineering research.

11. In the late 1990s, I was a hardware and software developer at Vicarious Visions in New York, developing third-party titles for Nintendo's handheld consoles, in addition to various hardware and software interfaces and solutions. These were used for the optimization and transfer of audio and graphics streams from developer workstations (desktop computers) to the peripheral consoles, via custom hardware and software solutions. During my career, I have served as Chief Technology Officer, advisory board member, and board of directors' member, often in co-founding roles.

12. From June 2006 to August 2007, I worked as the Technical Co-Founder of Method Seven LLC in Boston, MA, working with high-performance software and hardware systems architecture. I am currently a co-founder, co-

inventor, and Chief Technology Officer of Network Native, an Internet of Things technology company as well as others that are detailed on my CV.

13. I have held the position of Adjunct Professor at Rice University since 2009 and the position of Managing Director at Polymathic Consulting since 2011. At Rice University, I instruct graduate-level curriculum in the areas of computer architecture, hardware and software systems, including multimedia processing and various codecs and optimizations for emerging architectures. I also advise on university research and various design initiatives, including the design of audio and media processing solutions for multiprocessor systems. At Polymathic Consulting, I work with a range of technologists from early-stage start-ups to Fortune 500 companies on similar technologies.

14. From 2008 to 2009, I was Senior Engineer working in high-performance compiler designs and next-generation multi-core microprocessors and architectures at Freescale Semiconductor in Austin, Texas. From November 2009 to October 2011, I was Chief Architect, Senior Member Technical Staff, at Freescale Semiconductor in Austin, Texas (formerly Motorola), responsible for management of technology, engineering roadmaps, design lead on software infrastructure, and next-generation multi-core microprocessor architectures. During my tenure at Freescale Semiconductor, I was in charge of system developer tools. These included

tools used for the programming of processors, simulation and modeling, and related technologies including digital networking and multimedia solutions.

15. I have previously worked for Texas Instruments' Advanced Architecture and Chip Technology division in Houston, Texas, in the areas of high-performance mobile and embedded systems design at the hardware and systems software level, specifically around heterogeneous computing, including solutions used in multimedia processing. I also have worked at Intel Corporation's Microprocessor Research Labs in the areas of computer architecture and compiler technologies.

16. I am recognized as an expert in the field of computer architecture, computer hardware and computer software systems as they relate to the subject matter at hand. I am a member of the Institute of Electrical and Electronics Engineers (IEEE) and Association for Computing Machinery (ACM) and have been a steering committee member for the IEEE and ACM Design Automation Conference since 2011 and have previously held the role of Program Chair of Design Automation Conference in the area of Embedded Computing. I have also been a reviewer and contributor to a number of IEEE and ACM technical conferences during the course of my career.

17. Over the past 20 plus years, I have authored numerous peer-reviewed publications, as well as engineering books in the area of computer hardware and

software design, including solutions for and optimization of codec technologies. Many of these incorporate technologies specific to the subject matter at hand. These publications are disclosed in my CV. I have previously served as an engineering consultant and testifying witness on matters related to, and including, microprocessors and multi-core technology as well as audio and video processing technology, peripherals and interfaces similar to those mentioned in the patents at suit in this matter.

18. Over the course of my career, in both industry and academia, I have worked on a number of computer peripheral devices. This work has included hardware design of peripheral devices, software design of application devices, as well as custom interface software such as drivers like those discussed in this matter. These devices have included gaming consoles, computer peripherals and related development tools systems. I have also worked in the development and maintenance of drivers for various computer peripherals, including those that utilize USB interfaces for multicore processor software development in such areas as digital signal processing and telecommunications.

19. My curriculum vitae contains more information on my background and experience, as well as the cases in which I have served as an expert witness over at least the past four years.

II. LEGAL STANDARD

20. Although I am not a lawyer, I have been advised on the relevant legal principles by counsel and have used them as a basis for my opinions.

A. Claims

21. I have been informed and understand that terms in the patent claims must be read as they would have been understood by a “person of ordinary skill in the art” (“POSITA”) at the time of the claimed invention.

22. I understand that a POSITA is a person to which the claimed subject matter pertains with the capability of understanding the scientific and engineering principles applicable to the pertinent art. I understand that the following factors may be considered in determining the level of ordinary skill:

- the type of problems encountered in the art;
- prior art solutions to those problems;
- the speed with which innovations are made;
- the sophistication of the technology; and
- the educational level of active workers in the field.

I also understand that not every factor may be present and that one or more factors may predominate others.

23. I understand that the claims within a patent set forth what the inventors have presented as their inventions. I understand that claims can be independent or in

dependent form, meaning that they depend from the identified independent claims and add requirements to those claims.

B. Specification

24. I understand that there are other parts of a patent, including the abstract, the figures of a patent, the background of the invention, the summary of the invention, and the detailed description of the invention. I understand that these portions often are collectively referred to as the “specification” of a patent. I understand that technically, the claims are part of the specification, but that referring to the “specification” typically means referring to the written description of the inventions rather than the claims. I understand that the specification informs the understanding of the claims by, for example, describing the claimed invention and providing preferred examples of the claimed invention.

25. I have also been informed and understand that terms of a claim should be understood in the context of the claim as a whole. I also understand that the specification of the patent is relevant to the meaning of a claim term. I further understand that the claims must be read in light of the specification.

C. Prosecution History

26. I understand that the correspondence back and forth between the representative of the applicant, and the U.S. Patent and Trademark Office, leading up to the issuance of a patent is called the “file history” or “prosecution history.” It

has been explained to me that, in the process of obtaining a claim of a patent, the inventors and the examiner may make statements explaining their understanding of the scope of their claimed invention. It has also been explained to me that for a statement by the inventors to narrow the scope of a claimed invention, the statement must clearly and unambiguously limit the scope of an invention. I understand this is called “prosecution disclaimer” or “prosecution disavowal.” I understand that the claim language, specification, and file history are referred to as “intrinsic evidence” or “the intrinsic record.”

D. Burden of Proof

27. I understand that, unlike at the district court, an *inter partes* review, such as this proceeding, apply a lower burden of proof to judge the patentability of challenged claims. Unlike the district court’s “clear and convincing” burden, here, a “preponderance of the evidence” burden exists.

E. Anticipation

28. I understand that a patent claim is invalid as “anticipated” by a single “prior art” reference if the reference discloses every single element of the claim with sufficient precision and detail to establish that the subject matter of the claim existed in the prior art. In particular, I understand that it is not sufficient to establish that all of the elements are collectively disclosed within the four corners of a particular document. Instead, the operative question is whether a person of ordinary skill would

have understood the elements as being arranged as in the claim itself. I also understand that a prior art reference cannot “anticipate” a patent claim unless that reference enables one of ordinary skill in the art to make and use what is disclosed without undue experimentation. Thus, if the reference does not enable one of ordinary skill to make or use each and every claim limitation, then the claim cannot be “anticipated” by the reference.¹

29. I understand that a prior art reference can disclose a given claim element actually or inherently.

30. In the case of actual disclosure, I understand that a person of ordinary skill would need to have understood that the disclosure corresponds to the claim element in question. I also understand that such disclosure may be implicit rather than explicit. For example, prior art need not use the same words as the claimed invention. However, I understand that ambiguous references do not anticipate.

31. In the case of alleged “inherent” anticipation, I understand that the claim element in question must necessarily be present when practicing the described technology even though the prior art reference itself contains no express description of the element in question. In particular, I understand that “possibilities or

¹ I understand that the Petition and Dr. Almeroth are not advancing any anticipation-based theories of unpatentability.

probabilities” are not sufficient to establish inherency. The mere fact that a certain thing may result from a given set of circumstances is not sufficient. Instead, the essence of inherency is that one of ordinary skill in the art would recognize that a reference unavoidably teaches the property in question.

F. Obviousness

32. I understand that a patent claim may describe an invention that was new (*i.e.*, not anticipated by any prior art reference), but nevertheless be invalid for “obviousness” if the differences between the patented subject matter and the prior art are such that the subject matter as a whole would have been obvious to a person of ordinary skill in the art at the time of the invention was made.²

i. *Analogous Art*

33. I understand that in order to rely on a reference to establish an obviousness theory the reference must be analogous to the claimed invention. I understand that in order to be analogous, the reference may either be part of the same “field of endeavor” or the reference may be “reasonably pertinent” to the problem addressed by the claimed invention.

² I understand that the Petition and Dr. Almeroth are advancing five “obviousness” theories with Grounds 1 to 5.

34. I understand that to determine the field of endeavor of a patent, the focus should be on the subject matter of the application, including function, structure, and the claimed invention. I understand that to determine the field of endeavor of the reference, the primary focus should be on what the reference actually discloses.

35. I understand to determine what is reasonably pertinent to a patent, one should consider the problem faced by the inventor as reflected in the specification, either explicitly or implicitly. A reference is only considered pertinent to that problem if a person of skill in the art would have considered it when faced with the problem the inventor was trying to solve.

ii. *Reasonable Expectation of Success*

36. I understand that an invention is not rendered obvious simply on the basis of two or more different disclosures that collectively disclose all of the claimed elements. In other words, an invention is not obvious just because all of the elements that comprise the invention may have been known in the prior art. Instead, a person of ordinary skill in the art must have had a reasonable expectation of success in pursuing the possibility that turns out to succeed and is claimed. In particular, I understand that knowledge of a goal does not itself render achievement of that goal obvious.

37. I also understand that determining whether or not a claimed invention would have been obvious requires assessing facts related to (1) the scope and content of the prior art, (2) the differences between the prior art and the claimed invention, (3) the level of ordinary skill in the art, and (4) any objective evidence (“secondary considerations”) of non-obviousness. I understand that this is known as consideration of the “Graham Factors.”

iii. *Motivation to Combine*

38. I further understand that an invention is not obvious just by demonstrating that each of its elements were, independently, known in the prior art. To prove that an invention is obvious, I understand that there must be a reason or reasons, such as a teaching, suggestion, or motivation, which would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed invention does. While an express teaching, suggestion, or motivation need not be found in a reference itself, I understand that there still must be an articulated reason why a person of ordinary skill in the art would make the proposed modification or changes. I understand that this is because inventions in most (if not all) instances rely upon building blocks already known, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known; therefore, it can be important to point to such a reason or reasons. I understand that in identifying such a reason, the analysis need not require precise teachings in the

prior art references themselves directed to the reason, and that the reason can come from other sources, such as the testimony of an expert.

39. I understand that it will often be necessary for a court to look to interrelated teachings of multiple patents and the background knowledge possessed by a person having ordinary skill in the art in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. I understand that any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed. I understand that when a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. I understand that the combination of familiar elements according to known methods may be obvious when it does no more than yield predictable results.

40. I also understand that a claim is not invalid as obvious if it is more than the predictable use of prior art elements according to their established functions.

41. Further, I understand that while predictability is a touchstone of obviousness, the concept of a “predictable result” under the law refers not only to the expectation that prior art elements are capable of being combined, but also that the combination would have arrived at the challenged claims.

42. I also understand that if the prior art “teaches away” from combining known elements in the manner claimed by the invention at issue, discovering a successful way to combine them is less likely to be obvious. In particular, I understand that 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, or would understand based on the reference that the line of development flowing from the reference’s disclosure is unlikely to be productive of the result sought by the applicant. Likewise, I understand that similar subject matter may not be sufficient motivation for a person of skill in the art to combine references if the references have conflicting elements.

43. Further, I understand that even if a reference does not necessarily “teach away,” the reference’s statements regarding preferences are relevant to a finding regarding whether a person of ordinary skill would have had reason to combine that reference with another reference.

iv. *Hindsight*

44. I also understand that one must be cautious and resist the temptation to rely on hindsight reasoning when attempting to combine references to suggest that a claim may be obvious. It is important to analyze validity based on the perspective of one of skilled in the art at the time of the invention, which for this case I have been

asked to assume is September 14, 2011, and which I understand is the date Dr. Almeroth used as the priority date of the '676 Patent. Ex. 1002, ¶21 (“I have been asked to initially consider that the time of the alleged invention of the '676 patent is around September 14, 2011.”). I understand that objective indicia (or “secondary considerations”) of non-obviousness or obviousness may be particularly probative and helpful in avoiding hindsight.

v. *Secondary Considerations*

45. I understand that as part of the obviousness analysis, one must also consider “objective indicia of non-obviousness” sometimes referred to as “secondary considerations.” These include commercial success, industry praise, unexpected results, copying, industry skepticism, licensing, and long-felt but unsolved need. I further understand that secondary considerations have greater applicability when there is a sufficient “nexus” between the evidence of secondary consideration and the claimed invention. This “nexus” is established when the evidence is tied to a product that embodies the patented features and is coextensive with them. I understand that the obviousness inquiry itself, and the weighing of secondary considerations, is a question of fact left to the fact finder, as a result I am not providing any opinions on the impact of any secondary considerations on the obviousness analysis. However, I understand that Patent Owner, Barco, is making an argument tied to the commercial success of its ClickShare product. I have been

asked to analyze Barco's products and provide my opinion as to whether Barco's product embodies the patented features and whether there are significant unpatented features in the ClickShare products; I have done so. *See* Section VI.A.

III. LEVEL OF ORDINARY SKILL IN THE ART

46. I understand that Dr. Almeroth opines that a POSITA "in the field of art of the '676 patent would have had at least a Master's Degree in Electrical Engineering with at least five years of work experience in computer science and embedded systems, or a Master's Degree in Computer Science with at least five years of work experience in electrical and computer engineering and embedded systems." Ex. 1002, ¶37. I understand that Dr. Almeroth has further opined that additional experience could substitute for professional experience. Ex. 1002, ¶37.

47. Given the disclosures of the '676 Patent, the claim scope, and what I have been informed is the educational level of the inventors and their work experience, I agree that this is an appropriate level of skill in this art.

48. Accordingly, my analysis and opinions below are given from the perspective of a POSITA in this technological field in the relevant time frame, unless stated otherwise.

49. I satisfied the definition of a POSITA before the filing date of the application leading to the '676 Patent. I now consider myself an expert in the relevant field of technology for the '676 Patent.

50. In forming my opinions for this declaration, I have used the perspective of one of ordinary skill in the art as defined above. My opinions, however, would not be affected if a POSITA is defined as someone who has slightly more or slightly less experience than described above.

IV. SUMMARY OF THE '676 PATENT

A. Overview

51. The '676 Patent provides “an electronic meeting tool and method for communicating arbitrary media content from users at a meeting[.]” Ex. 1001, Abstract. As set out by the inventors, the electronic tools of the '676 Patent improve the ability and ease of presenting content in a meeting setting. Ex. 1001, 3:38-5:24, 15:47-62. Prior art systems required cables, LAN connections, or specialized software. Ex. 1001, 3:38-4:21.

52. In one example, Figure 1a “shows a meeting room that can be used with embodiments of the present invention.” Ex. 1001, 14:38-39. As shown below, multiple participants 37 are in meeting room 30. Ex. 1001, 15:66-16:3. Each participant 37 has a processing device 31, which is a host device with a first connection unit 47 coupled to network 50. Ex. 1001, 16:1-16:5. Connection unit 47 is also coupled to input device 48. Ex. 1001, 16:8-10. Network 50 further includes base node 36 connected to display 44. Ex. 1001, 16:55-58. Thus, the base node, user

the processing device, captures video data that is available on the processing device. Ex. 1001, 22:63-67. Because the software application is stored on the peripheral device and loaded onto the processing device when coupled, the software is implemented as a portable application thereby leaving a zero-footprint on the processing device once disconnected. Ex. 1001, 20:65-21:3.

55. Then, the base node receives the data, which is unpacked and decoded, before synchronizing and sharing the data over the display and other output devices. Ex. 1001, 16:55-58, 23:56-58. Notably, none of the cited references provide the same system as recited in the Challenged Claims. *See generally*, Ex. 1005; Ex. 1030, Ex. 1008; Ex. 1009.

B. Claim Construction

56. I do not provide an opinion on any claim construction issues in this matter. I have been asked by counsel to apply the following constructions as identified below. For any term not expressly identified below, I have applied the plain and ordinary meaning, as understood by a POSITA in view of the specification.³

³ I understand that Petitioner has proposed additional claim constructions which I have not identified here. My failure to respond to these constructions does not mean

Term	Applied Construction
“couple” / “coupling”	“connect[ing] two devices, either directly or indirectly”
“means for communication”	Governed by 35 U.S.C. § 112 ¶ 6 Function: Provide audio communication between the peripheral device and the processing device Structure: “an interface using a generic communications protocol” As set forth in Ex. 2016, 10-13.

V. SUMMARY OF THE ART

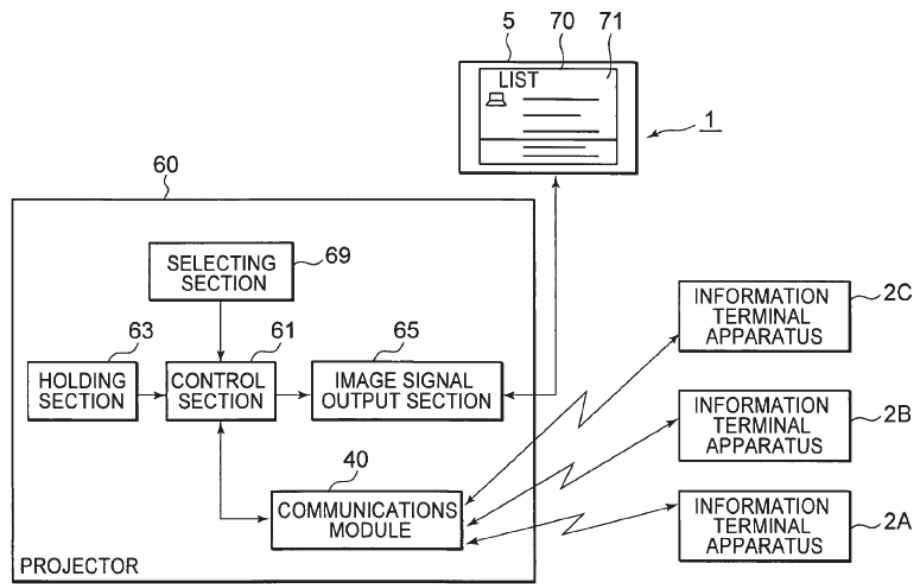
A. Ono (Ex. 1005)

57. Ono provides an image display apparatus that receives images from multiple information terminal apparatuses over a network. Ex. 1005, [0035]. Ono states that “it was difficult to select, from the side of the projector, an information terminal apparatus from among a plurality of information terminal apparatuses on the side that sends the image.” Ex. 1005, [0006]. In view of these difficulties, Ono provides a system that is “capable of switching among a plurality of networked information terminal apparatuses and selecting a desired information terminal apparatus therefrom, and of displaying on a display section image information from

I agree with these proposed constructions, and I reserve the right to later opine about these proposed constructions.

the desired information terminal apparatus.” Ex. 1005, [0007]. Simply put, Ono’s system can switch between multiple networked information terminal apparatuses. Information terminal apparatuses are, for example, PCs. Ex. 1005, [0039].

58. Ono’s system includes a wireless connection module that connects to a slot of a projector. Ex. 1005, [0039]. The communication modules connect to the information terminal apparatus and thereby receive images sent from the information terminal apparatuses. Ex. 1005, [0039]. The communication modules also (1) transmit and receive requests to connect and disconnect the information terminal apparatuses from the network and (2) transmit image information to the projector from the information terminal apparatuses once they are connected. Ex. 1005, [0038], [0039]. Figure 3 illustrates a block diagram of image display apparatus 1. Ex. 1005, [0042], Figure 3 (reproduced below). The image display apparatus includes screen 5, projector 60, communications module 40, and informational terminal apparatuses 2A, 2B, 2C. Ex. 1005, [0042], Figure 3.



Ex. 1005, Figure 3.

59. The projector further includes “a holding section **63**, a control section **61**, a selecting section **69**, an image signal output section **65** and the above-mentioned communications module **40**.” Ex. 1005, Figure 3, [0043]. Using the selecting section, a user can select an information terminal apparatus from a list to display. Ex. 1005, [0044]. After user selection, a request signal is generated by the control section, which is then transmitted from the communication module to the selected information terminal apparatus. Ex. 1005, [0045]. If the selected information terminal apparatus accepts the request signal, the selected information terminal apparatus transmits the image information. Ex. 1005, [0047].

B. Grimshaw (Exhibit 1008)

60. Grimshaw provides a “communication system that may be integrated or otherwise combined with a piece of furniture, such as a conference table, desk or

credenza.” Ex. 1008, Abstract, [0012]. In an illustrative example, the communication system includes a control module, which acts as an information hub and exchanges information with the other hardware components in the system. Ex. 1008, [0012], [0013]. The communication system further includes user modules. Ex. 1008, [0019]. The user modules are configured to connect to separate laptop computers and control hardware components of the communication system. Ex. 1008, [0019].

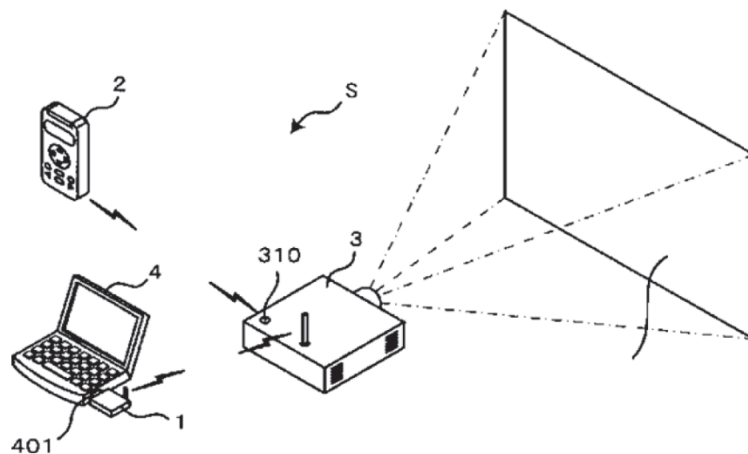
61. The user modules include a button. Ex. 1008, [0005]. Upon activating the button, a user can take over some control of the communication system. Ex. 1008, [0005]. When multiple user modules are “are vying for control of the display module...each of the connected computers is outputting data signals through data connections **342, 352, 362, 372** for presentation on display module **22**...by respectively engaging buttons 344, 354, 364, 374 which causes the switch controller 318 to pass the data signals from the selected user module on the display module.” Ex. 1008, [0019].

C. Uchida (Exhibit 1009)

62. Uchida provides “a remote control device for remotely controlling an image projection device and an image projection system including the remote control device.” Ex. 1009, [0001]. Uchida explains that the prior wireless communication systems risked leaking wireless communication setting information, which would compromise the communication link between an image projection

device and a computer device. Ex. 1009, [0014]. This situation could happen when the image projection device is shared among multiple devices, and the network settings remain on a computer after the wireless communication system is used. Ex. 1009, [0012]. In an illustrative example, a first group is using a wireless communication system; however, a second group, which used the communication system before the first group, could continue to communicate image data, creating a security risk. Ex. 1009, [0012].

63. Uchida's system solves this issue with its remote control device, which controls the image projection device and generates new wireless setting information. Ex. 1009, [0012]. By generating new wireless setting information, the devices that previously used the communication system would no longer function. Ex. 1009, [0013]. Uchida's image projection system includes an image projection device and a remote control that communicate with a wireless device. Ex. 1009, [0039].



Ex. 1009, Figure 1.

64. Figure 1 illustrates an example embodiment of Uchida's image projection system. As introduced, the remote control device 2 communicates with the wireless device 1 and controls the operation of the image projection device 3. Ex. 1009, [0039]. In Figure 1, "[t]he wireless device 1 is a USB dongle that functions as a wireless part of a computer device 4 and as a memory." Ex. 1009, [0039].

65. In order to transmit data to the image projection device, the wireless device must have the correct "wireless setting information" in its wireless setting information storage unit. Ex. 1009, [0044]. The correct wireless setting information is received by wireless device when the wireless device is connected to the remote control device via a USB connector. Ex. 1009, [0044]. More specifically, the remote control device, when connected to the wireless device, writes the current wireless setting information into the wireless setting information storage unit of the wireless device. Ex. 1009, [0044].

66. Moreover, the computer device, when connected to the wireless device, installs a device driver, wireless setting application, and image transfer application. Ex. 1009, [0048]. Then, the computer device requests the wireless setting information from the wireless device. Ex. 1009, [0048]. In response, the wireless device outputs the wireless setting information to the computer device via the USB connector. Ex. 1009, [0048]. Once the computer device receives the wireless setting information, the computer device "sets this wireless setting information in the

wireless communication unit of the wireless device 1 using a device driver.” Ex. 1009, [0048]. Also, “the remote control device 2 notifies the image projection device 3 of the wireless setting information written in the wireless device 1 by infrared communication.” Ex. 1009, [0049]. This process allows the wireless device to communicate with the wireless unit of the image projection device. Ex. 1009, [0048].

67. To initiate the communication process, a user presses the start-up control button on the remote control. Ex. 1009, [0049]. “The start-up control button 231 is a button for issuing start and stop instructions to the image projection device.” Ex. 1009, [0045]. In other words, the start-up control button controls whether the projection device projects information. Ex. 1009, [0045]. The wireless device also includes a toggle, but the toggle only tells the projector to project image data or a black screen on the image projection device. Ex. 1009, [0071]. This toggle has no effect on whether information is or is not being transmitted from the wireless device to the image projection device. Ex. 1009, [0071].

D. Deforche (Exhibit 1030)

68. Deforche provides a system that has a wireless modem and specifically avoids the need to install proprietary or custom software and driver. Ex. 1030, [0004]. Deforche explains that users typically need to install proprietary drivers before they can use a USB network device. Ex. 1030, [0030]. To address this issue, Deforche provides a “Zero-Footprint” system that avoids the need for the user to

have, for example, administrator rights on the computer; thus, Deforche's system provides connectivity without interfering on the PC itself. Ex. 1030, [0028], [0029]. Deforche's disclosure is directed to connecting a computer device to a wireless communication network via a modem rather than specific methods or system for the transmission of audio or video data. Ex. 1030, [0006].

E. Device Drivers

69. As introduced in Section IV.A, the '676 Patent uses an operating system having a pre-installed generic driver. Ex. 1001, Cls. 1, 11, 21. While a pre-installed generic driver is considered software, these drivers significantly differ from computer applications and operating systems. Drivers act primarily as translators which allow different systems to communicate with one another.

70. Specifically, an operating system is a type of system level software that is used to manage the hardware and software resources on a computer. For example, the operating system is responsible for managing memory, file systems, computer networking functionality, and user interfaces, among other key functions. The operating system also provides the foundation for which computer applications can run. Example operating systems include Window, MacOS, Android, iOS, and Linux.

71. Software applications are specific computer programs that are designed to perform user oriented tasks. Common software applications include web browsers, media players, and productivity applications such as Microsoft Word.

72. Drivers, which may include specific drivers, generic drivers and pre-installed generic drivers, provide a special function. For example, drivers control hardware that is connected to a computer; this allows the operating system and computer applications to interact with the hardware. Ex. 2022. Drivers are translators for the underlying hardware and the software layers of the operating system and applications themselves. This is beneficial because the operating system and applications do not need to know that they are accessing one type of device over another (*e.g.*, a USB memory device rather than a memory disk). Ex. 2022. Instead, the driver is designed to translate commands to the specific device, and the operating system and application can be agnostic to the peripheral device it interacts with (*e.g.*, a mouse, keyboard, USB memory) and instead treats them as a device in certain classes (*e.g.*, human interface device or storage device).

73. Importantly, drivers are specific to an operating system. In other words, a driver must operate with and conform to the operating system's device driver architecture. Drivers may also be generic drivers if they are designed to work with a large variety of devices. Ex. 2022. Drivers that are available, and come by default, on commercial operating systems are commonly referred to as "pre-installed generic drivers." USB drivers are common pre-installed generic drivers. *See* Ex. 2024. The USB standard includes different USB device classes. Ex. 2024, 1. These classes are made up of devices categorized based on their characteristics and the common

functions they perform. Ex. 2024, 1. Common operating systems like Microsoft Windows for example, provide support for USB devices with their pre-installed drivers. Ex. 2024, 1. While Exhibit 2024 includes a list (pages 3-8) of drivers on the Windows operating system, other operating systems (E.g., iOS) will include a similar set of corresponding USB drivers.

74. When a device that is supported by the operating system is plugged into a port of the computer, it will automatically call the necessary class driver and the device will function without installation of additional drivers. The class drivers are designed with the purposes of the devices in the class in mind so that they can communicate the appropriate volume of data at the necessary speed. The different class drivers also provide different communications protocols and command structures as well.

75. If a device is plugged in that is not supported, or when certain capabilities of a device are not supported, a vendor may provide a custom or specific driver that may be installed on the computer to support the functionality not supported by the pre-installed generic drivers. Ex. 2024, 2. These “special purpose” drivers are often unique to the hardware they are supporting.

VI. OPINIONS

A. Ground 1: Dr. Almeroth Fails to Establish that the Combination of Ono and Deforche Renders Obvious Any of the Challenged Claims

76. Dr. Almeroth opines that Claims 1, 5, 18, and 20 of the '676 Patent are obvious over the combination of Ono and Deforche. Ex. 1002, Section IX.A. I disagree with Dr. Almeroth for four main reasons.

77. First, it is my opinion that a POSITA would not be motivated to combine Ono and Deforche. It is my opinion that a POSITA would not be motivated to combine Ono, a system which requires software to be installed, with Deforche, a system that avoids the installation of software.

78. Second, it is my opinion that Ono and Deforche, alone or in combination, do not teach communicating at least setting up, by means of a pre-installed generic driver of the operating system, a means for communication between the peripheral device and the processing device. As this feature is required by Claim 1, Ono and Deforche fail to teach all limitations of this challenged Claim.

79. Third, it is my opinion that Ono and Deforche, alone or in combination, do not teach running a client application stored on the peripheral device to obtain screen scraped data or arbitrary media content. As this feature is required by Claims 1 and 16, Ono and Deforche fail to teach all limitation of these Challenged Claims.

80. Fourth, it is my opinion that Ono and Deforche do not teach running the program which does not require installation of the program or configuration of the processing device. As this feature is required by Claim 18 to 20, Ono and Deforche fail to teach all limitations of these Challenged Claims.

81. For these reasons, Dr. Almeroth's proposed combination in Ground 1 fails to render obvious the Challenged Claims.

i. A POSITA would not have been motivated to combine Ono and Deforche

82. Dr. Almeroth opines that a POSITA would combine Ono and Deforche because Ono likely already relied on pre-installed generic drivers. Ex. 1002, Section IX.A. However, it is my opinion Ono relies on a specific, custom driver, and that a POSITA would not be motivated to combine Ono and Deforche due to Deforche's aim of providing a zero-footprint system.

83. First, I disagree with Dr. Almeroth, as Ono teaches a system which utilizes a specific software application, driver, and configuration information installed on its information terminal apparatus (e.g., computer). For example, Ono explains that "to connect the projector 60 of the image display apparatus 1 and the information terminal apparatus 2A to the wireless network, the user clicks on a set-up file with a mouse after plugging the USB memory 45 in a USB jack on the information terminal.... An installer will automatically be activated on the

information terminal apparatus 2A, and the connection application 56, the driver 47 and the configuration information 48 will automatically be stored in the HDD (Hard Disk Drive).” Ex. 1005 [0005]. Dr. Almeroth has also identified this portion of Ono. Ex. 1002, ¶128.

84. It is my opinion that Ono does not describe another way to connect the image display apparatus and the information terminal device other than use the specific driver, as well as the connection application and configuration settings. Ono does not already use just pre-installed generic drivers, and does not include a zero-footprint implementation. Therefore, it is my opinion that a POSITA would not be motivated to combine Ono, a system which requires installation of software, with Deforche, a zero-footprint system which discourages installation of software.

85. Deforche explains that existing wireless modem devices cannot be used by foreign computer device when “the user has no administrator rights and installation of the appropriate driver is not allowed.” Ex. 1030, [0003]. Recognizing this disadvantage, Deforche set out “to achieve USB (or other interface) modem functionality in any computer (Operating system independent) without leaving a footprint (Zero-Footprint).” Ex. 1030, [0028]. Deforche provides a wireless modem device while avoiding the need to install drivers or software application on the computer. Ex. 1030, [0004], [0040], [0028].

86. Specifically, Deforche uses a pre-installed generic driver, which “has the advantage that a user can use the wireless modem device on a computer device on which he has no administrator rights, *i.e.* a computer device on which his user rights are restricted so that he cannot install a specific driver for the wireless modem device.” Ex. 1030, [0009]. This embodiment of Deforche requires (and specifically avoids) the installation of specialized drivers, which is the sole embodiment that Dr. Almeroth relies on in his Ground 1 combination.

87. As Deforche explains, a switching mechanism allows its device to present itself as a USB modem device, which includes a mass storage device (*i.e.*, UMS) and a human interface device (*i.e.*, HID). Ex. 1030, [0036]. Deforche also explains that, in some embodiments, the system relies on “portable applications which run from the modem device without the need to install anything on the host.” Ex. 1030, [0015], [0050]. In each embodiment, a POSITA would have understood that Deforche specifically designed its system to avoid the need to install proprietary or custom software and drivers. Ex. 1030, [0004], [0028]. For this reason, a POSITA would not have been motivated to combine Deforche with a system that requires the installation of software or special drivers to function.

88. Meanwhile, Ono is a system which relies on installation of software on the host processing device and is by definition, not a zero-footprint system. Ono teaches use of an installer which is activated to install the connection application,

driver, and configuration information on the hard disk drive of the information terminal apparatus. Ex. 1005 [0055]. Ono does not identify a way in which the information terminal and the image projection system can communicate without using the installed driver, connection application, and configuration information. *See* Ex. 1005. Dr. Almeroth has also identified the installation of these software components in his challenge. Ex. 1002, ¶128.

89. Because Ono specifically requires installation of a specific driver, software application, and configuration information, it is my opinion a POSITA would not be motivated to combine it with Deforche. To form the combination, a POSITA would have to ignore that Deforche relies on pre-installed drivers to achieve a zero-footprint implementation and discourages use of custom software solutions while Ono relies on installation of an application and driver to achieve its wireless transmission.

- ii. Ground 1 fails to render obvious setting up, by means of a pre-installed generic driver of the operating system, a means for communication between the peripheral device and the processing device

90. Claim 1 of the '676 Patent includes the limitation “setting up, by means of the pre-installed generic driver of the operating system, a means for communication between the peripheral device and the processing device.” Ex. 1001, Cl. 1. It is my opinion that Ono and Deforche do not render this limitation obvious.

91. First, it is my opinion that Dr. Almeroth has not applied the claim construction he identifies in Section VII.A of his declaration. Ex. 1002, ¶¶128-132. For example, I understand that the “means for communication” is referring to the communication between the computer device and the network via the connection unit (i.e. peripheral device). Ex. 1001, 20:35-50; Ex. 1002, ¶85. Dr. Almeroth identifies communications between a USB memory and the information terminal device, which communicates the driver, connection application, and driver. Ex. 1002, ¶128; Ex. 1005, [0050], [0055]. This is not the means for communication between the information terminal and a network via the peripheral device as Dr. Almeroth identifies in Section VII.A of his declaration.

92. Rather than showing that the claimed “means for communication” is set up by a pre-installed generic driver, Dr. Almeroth opines that a driver (which he opines is a pre-installed generic driver) is used to install a specific driver that is later used to set up the means for communication. Ex. 1005, [0055]. However, Dr. Almeroth’s identified driver does not, itself, set up the means for communication.

iii. Ground 1 fails to render obvious running a client application stored on the peripheral device to obtain screen scraped data

93. Claim 1 of the ’676 Patent includes the limitation of “running a client application stored on the peripheral device to obtain screen scraped data” Ex. 1001, Cl. 1. It is my opinion that Ono and Deforche do not render this limitation obvious.

94. First it is my opinion that Ono and Deforche do not disclose the client application being on the peripheral device. The connection application, driver, and configuration information are originally stored on a USB memory that comes with the image display apparatus. Ex. 1005, [0045].

95. It is not my opinion that where the connection application, driver, and configuration information can be stored is simply a matter of design choice as Dr. Almeroth opines. Ex. 1002, ¶137. For example, Dr. Almeroth himself notes that such modification may require including adding a memory chip or including a larger memory into the information communication module. Ex. 1002, ¶137. Additionally, Dr. Almeroth's implementation compares such modification to increasing the storage capabilities of a PC. Ex. 1002, ¶137. However, the storage capabilities of a PC do not need to be modified as a general purpose processing device often includes storage space for additional applications to be installed, and Ono also notes that its system is capable of installing the driver, connection application, and configuration information. Ex. 1005, [0055].

96. Dr. Almeroth did not identify any modification to the USB memory or wireless connection module relating to the driver and the configuration information, nor identify other components that could be used to drive the wireless connection module. Therefore, it is my opinion that even in Dr. Almeroth's combination, the USB memory is still a necessary component. In other words, because the information

terminal apparatus still requires installation of the driver and configuration information via the USB memory, moving the connection application to the wireless connection module would not even reduce the number of components necessary.

97. Second, it is also my opinion that POSITA would not consider running the connection application without also storing it on the information terminal device as Ono describes. Ex. 1005, [0055]. In addition to the connection application, the USB memory also includes and installs onto the information terminal apparatus the driver and configuration information. Ex. 1005, [0055]. It is this driver that is used, and required, for driving the wireless connection module when it is connected to the information terminal apparatus. Ex. 1005, [0051].

98. Dr. Almeroth does not identify another means of driving communications between the wireless connection module and the information terminal apparatus. So, it is my understanding that the specific driver from the USB device would still need to be installed onto the information terminal apparatus to provide this function, regardless of where it is originally stalled in the system. Otherwise, there would be no way to drive the wireless connection module from the information terminal apparatus.

99. Since installation of the driver would be required, there would be no reason to not also install the configuration information and the connection application as Ono already teaches. Ex. 1005 [0055].

100. It is my opinion that the teachings of Deforche do not correct the insufficiency of Ono with respect to running the client application on the peripheral device. For example, in Deforche, interactions between the PC and wireless modem are driven by pre-installed driver. Ex. 1030, [0009]. This enables communication between the wireless modem and the PC without installation of new drivers.

101. However, as noted in Ono, there is not an identified pre-installed generic driver capable of driving the wireless connection module. Dr. Almeroth also has not provided an opinion regarding any pre-installed generic drivers which would purportedly perform the function of driving Ono's wireless connection module. To the extent Dr. Almeroth later opines that such pre-installed generic driver exists, I reserve the right to respond to these opinions.

102. Third, it is my opinion that Dr. Almeroth has not identified a client application which is used to obtain screen scraped data. For example, Ono teaches that its connection application is used to provide a network connection, but I do not interpret this to include screen scraping. Ex. 1005, [0051]. Further, while I understand Dr. Almeroth has provided a construction relating to "screen scraped data" (Section VII.F) it is my opinion that Dr. Almeroth has identified what teachings in Ono disclose this limitation.

103. While Dr. Almeroth cites to a reference, Slobodin (Ex. 1033), Dr. Almeroth has not provided a motivation to combine to implement teachings of

Slobodin into Ono. To the extent Dr. Almeroth later provides opinions regarding a motivation to implement teachings from Slobodin, I reserve the right to respond.

104. It is also my opinion that Deforche does not disclose either screen scraping or wireless presenting. I understand Deforche to be directed towards a specific implementation of a wireless modem. Ex. 1030, Title.

iv. Ground 1 fails to render obvious running a program without installation of the program or configuration of the processing device

105. Claim 18 includes the limitation “wherein running said program does not require installation of the program or configuration of the processing device.” Ex. 1001, Cl. 18. Likewise, Claim 20 includes the limitation “a program adapted to be loaded onto the processing device and to run on an operating system of the processing device.” Ex. 1001, Cl. 20. It is my opinion that Ono and Deforche do not render this obvious.

106. For example, Ono specifically requires installation of the connection application and configuration information on the processing device. Ex. 1005 [0055].

B. Ground 2: Dr. Almeroth Fails to Establish That the Combination of Ono and the AAPA recite all limitations of Claim 14

107. Dr. Almeroth opines that Claim 4 of the '676 Patent is obvious over the combination of Ono and AAPA. Ex. 1002, Section IX.B. I disagree with Dr. Almeroth.

108. Dr. Almeroth relies on what he describes as applicant admitted prior art (AAPA) and Ono to teach the limitations of Claim 14. I have not been asked to offer an opinion as to whether I agree with Dr. Almeroth in his identification of AAPA. I also understand that applicant admitted prior art cannot be a basis of rejection in an IPR proceeding. Regardless, I have been asked to offer opinions in response to Dr. Almeroth assuming that he is correct in his identification of AAPA.

109. It is my opinion that Ono does not specifically disclose screen scraping. While I understand Dr. Almeroth has provided a construction relating to “screen scraped data” (Section VII.F) it is my opinion that Dr. Almeroth has identified what teachings in Ono disclose this limitation. Also, upon reviewing Dr. Almeroth’s discussion of Ground 2 (Section IX.B) it is my opinion that Dr. Almeroth has not identified a motivation to combine Ono with AAPA.

C. Ground 3: Dr. Almeroth Fails to Establish that the Combination of Ono, Deforche, and Grimshaw Renders Obvious Any of the Challenged Claims

110. Dr. Almeroth opines that Claims 4, 16, and 19 of the '676 Patent are obvious over the combination of Ono, Deforche, and Grimshaw. Ex. 1002, Section IX.C. In addition to the reasons I have previously identified with respect to Ground 1 and Ground 2, I disagree with Dr. Almeroth for two additional reasons.

111. First, Dr. Almeroth has not established that a POSITA would be motivated to combine Ono and Grimshaw. It is my opinion that a combination between Ono and Grimshaw as advocated by Dr. Almeroth results in an unworkable system.

112. Second, it is my opinion that Ono, Deforche, and Grimshaw, alone or in combination, do not teach an input device that triggers transfer of data. As this feature is required by Claim 4 and 16, Ono and Deforche fail to teach all limitations of these Challenged Claims.

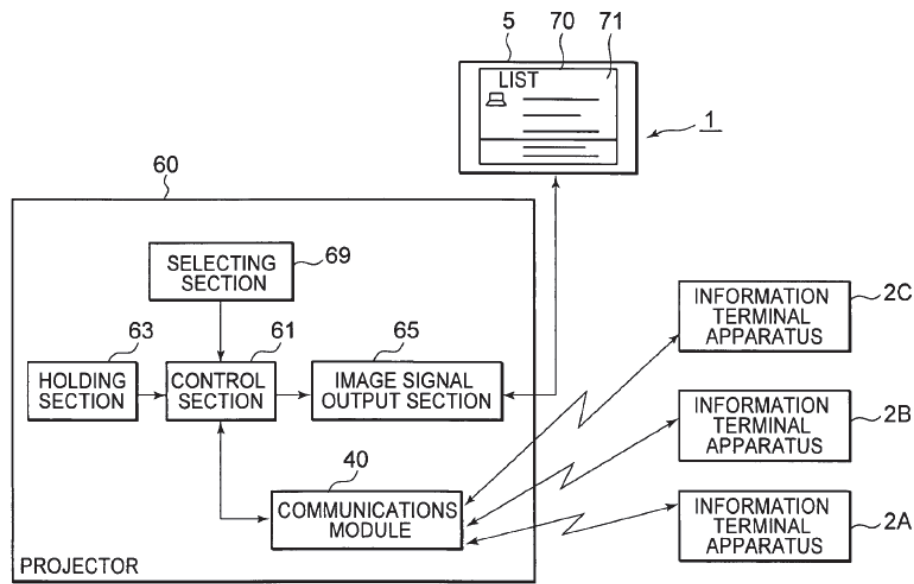
113. For these reasons, Dr. Almeroth's proposed combination in Ground 3 fails to render obvious the Challenged Claims.

i. The combination of Ground 3 renders Ono inoperable

114. Dr. Almeroth opines that "It is my opinion that it would have been a simple design choice to move Ono's button to other devices in the system, including the peripheral device as taught by Grimshaw. Grimshaw also discloses benefits of

giving each user control of the display. (Id., ¶¶4-6, 28, 37). Moving or adding a button to Ono's peripheral device would have predictably resulted in a system similar to Grimshaw allowing the user to present their display onto the projector." I disagree with Dr. Almeroth; a POSITA would have understood that implementing the function of Ono's remote controller into each one of the communication modules would not provide a workable system.

115. Ono "seeks to provide an image display system including a plurality of information terminal apparatuses connected to a wire or wireless network and an image display apparatus, wherein switching among the plurality of networked information terminal apparatuses and selecting a desired information terminal apparatus therefrom can be performed from the side of the image display apparatus, and image information from the desired information terminal apparatus can be displayed on a display section of the image display apparatus." Ex. 1005, [0008]. Figure 3 is an example embodiment depicting a configuration of the image display apparatus. Ex. 1005, [0020]. The image display apparatus includes screen 5 and projector 60. Ex. 1005, [0042]. The projector further includes "a holding section 63, a control section 61, a selecting section 69, an image signal output section 65 and the above-mentioned communications module 40." Ex. 1005, Figure 3, [0043].



Ex. 1005, Figure 3.

116. The holding section “stores information of information terminal apparatuses 2A, 2B and 2C.” Ex. 1005, [0044]. Control section 61 reads the information held by the holding section, and image signal output section 65 generates displays list 71 on screen 5. Ex. 1005, [0044]. The list corresponds to the information of the information terminal apparatuses. Ex. 1005, [0044]. The selecting section then selects one information terminal apparatus from this list. Ex. 1005, [0044].

117. Once an information terminal apparatus is selected from the list, a request signal is generated by the control section; the communication module transmits the request signal to the information terminal apparatus that is selected. Ex. 1005, [0045]. After the selected information terminal apparatus transmits an

acceptance response signal in response to the request signal, the selected information terminal apparatus transmits the image information. Ex. 1005, [0047].

118. However, the selected information terminal apparatus does not automatically transmit an acceptance response signal; instead, the selected information terminal apparatus may accept or deny the signal request depending on whether a connection is possible. Ex. 1005, [0047], [0094], [0095]. If the signal request is denied, then the selected information terminal apparatus does not transmit the image information. Ex. 1005, [0047], [0096]. Thus, the end result of whether the image information is transmitted (or not transmitted) is dependent on whether the selected information terminal apparatus accepts the signal request.

119. As introduced in reference to Figure 3, the selecting section selects one information terminal apparatus from the list. Ex. 1005, [0044]. In the embodiment of Figure 6, remote controller 69 is an example of the selecting section of Figure 3. Ex. 1005, [0066]. Accordingly, the remote controller can be used to select the one information terminal apparatus from the list that is displayed on the screen. Ex. 1005, [0066]. Additionally, the remote controller can configure the connection to the wireless network, switch the connection and disconnection of the information terminal apparatuses, and control the image displayed (*e.g.*, forwarding and rewinding the image displayed). Ex. 1005, [0066], [0068], [0070].

120. It is my opinion that implementing the functionality of Ono's remote into each communication module connected to the information terminal apparatuses would not result in a predictable or workable system.

121. Namely, a POSITA would have understood that this functionality includes selecting which information terminal apparatus should share content, as well as controlling the display of the content. Ex. 1005, [0066], [0068], [0070]. But Dr. Almeroth does not explain how the projector of the combined system would navigate multiple competing or conflicting commands from different communication modules. *See* Ex. 1002, ¶¶163-197.

122. Notably, the combination also ignores Ono's disclosure regarding its goals. Ono designs and provides a system that selects a desired information terminal apparatus where this selection can be performed "from the side of the image display apparatus." Ex. 1005, [0008]. Dr. Almeroth's combination provides the opposite; it forces the selection function into the communication module and prevents the image display apparatus from providing the selection functionality. As contrary to Ono's disclosure and its goals, a POSITA would not have been motivated to remove the selection functionality from the image display apparatus.

- ii. Ground 3 fails to render obvious an input device that triggers transfer of data, the input device being an actuator coupled to the peripheral device

123. Claim 4 of the '676 Patent includes the limitation “wherein the peripheral device has an actuator, the method further comprising a user action on the actuator that triggers transfer of the data for display from the processing device to the wireless transceiver and from there to the wireless communications network.” Ex. 1001, Cl. 4. Likewise, Claim 16 of the '676 Patent includes the limitation “an input device to allow the user to carry out a user action that triggers transfer of said user selected arbitrary media content from said processing device to a transmitter and to the wireless communications network, the input device being an actuator coupled to the peripheral device.” Ex. 1001, Cl. 16. It is my opinion that Ono, Deforche, and Grimshaw do not teach this limitation.

124. First, it is my opinion that Ono does not teach this limitation. Ono's projector includes a control section. Ex. 1005, [0045]. The control section generates a request signal once an information terminal apparatus is selected. Ex. 1005, [0045]. The communication module of the projector then transmits the request signal to the information terminal apparatus that is selected. Ex. 1005, [0045]. The selected information terminal apparatus may accept or deny this request signal. Ex. 1005, [0047], [0094], [0095].

125. This is important because the control section of the projector does not trigger the transfer of content as required by the Challenged Claims. Instead, the disclosure makes clear that the control section requests the transfer of said content. After this request, there are several steps before the content is either transferred or not transferred. Ex. 1005, Figures 9-15. The generation of a request signal does not trigger transfer of content; content may or may not be transferred.

126. Second, it is my opinion that Grimshaw does not teach this limitation. I have reviewed Dr. Almeroth's opinions, and have not found him to opine that Grimshaw discloses a claimed peripheral device. *See* Ex. 1002, ¶¶163-197. It is my opinion that Grimshaw does not specifically disclose the claimed peripheral, and I reserve the right to respond to Dr. Almeroth if he later opines that Grimshaw includes a claimed peripheral device.

127. Additionally, Grimshaw includes switch controller 318, which receives audio, video, and data signals from all user modules and communications accessories based on user selections. Ex. 1008, [0019]. When multiple user modules are "are vying for control of the display module...each of the connected computers is outputting data signals through data connections 342, 352, 362, 372 for presentation on display module 22...by respectively engaging buttons 344, 354, 364, 374 which causes the switch controller 318 to pass the data signals from the selected user module on the display module." Ex. 1008, [0019].

128. Dr. Almeroth has not opined that Deforche teaches this limitation. Ex. 1002, ¶¶163-197. It is my opinion that Deforche does not teach this limitation, as it is directed towards a wireless modem rather than a wireless presentation or sharing system. Ex. 1030.

129. Accordingly, the user module buttons do not trigger data transfer from the transmitter. Instead, the user module buttons informs the switch controller to which data signal to transmit to the display. The data transmission then occur regardless of whether the user module button was pressed.

iii. Ground 3 fails to render obvious running a program without installation of the program or configuration of the processing device

130. Dr. Almeroth relies on his argument made with respect to limitation 16(d) with respect to claim 19. However, I understand Claim 19 to recite a different limitation, namely “wherein running said program does not require installation of the program or configuration of the processing device.” Additionally, it is my opinion that Ono, Deforche, and Grimshaw do not teach this limitation for the reasons I explained in Section VI.A.iv.

D. Ground 4: Fails to Establish that the Combination of Uchida, Deforche, and Grimshaw Renders Obvious Any of the Challenged Claims

131. Dr. Almeroth opines that Claims 1, 4, 5, 8, 16, and 18 to 20 of the '676 Patent are obvious over the combination of Uchida, Deforche, and Grimshaw. Ex. 1002, Section IX.D. I disagree with Dr. Almeroth for five additional reasons.

132. First, it is my opinion that, like with Ground 1, a POSITA would not consider combining a reference which relies on software installation (Uchida) with a reference which discourages use of custom software in favor of a zero-footprint system.

133. Second, it is my opinion that Uchida teaches away from the subject matter of the '676 Patent. Namely, the '676 Patent discloses and claims a “forcing rule” which Uchida teaches away from.

134. Third, similar to Uchida teaching away it is my opinion that a POSITA would not combine Uchida and Grimshaw. While Uchida seeks to limit the ability for multiple people to share content without authorization to avoid erroneous content sharing, Grimshaw seeks to simply multiple users sharing content.

135. Fourth, it is my opinion that Uchida, Deforche, and Grimshaw, alone or in combination, do not teach communicating at least setting up, by means of a pre-installed generic driver of the operating system, a means for communication

between the peripheral device and the processing device. As this feature is required by Claim 1, Ono and Deforche fail to teach all limitations of this Challenged Claim.

136. Fifth, it is my opinion that Uchida, Deforche, and Grimshaw, alone or in combination, do not teach an input device that triggers transfer of data. As this feature is required by Claim 4 and 16, Ono and Deforche fail to teach all limitations of these Challenged Claims.

137. Sixth, it is my opinion that Uchida, Deforche, and Grimshaw, alone or in combination, do not teach running a program without installation of the program or configuration of the processing device

138. For these reasons, Dr. Almeroth's proposed combination in Ground 4 fails to render obvious the Challenged Claims.

i. A POSITA would not be motivated to combine Uchida and Deforche

139. It is my opinion that Uchida, (like Ono), require installation of software and a driver. Accordingly, a POSITA would not combine Uchida, with a zero-footprint system like Deforche, as I explained in Section VI.A.i.

140. Uchida clearly explains that software is installed onto its system. For example, Uchida explains that, when the wireless device is plugged into the computer, "the computer device 4 *installs* a device driver program (hereinafter abbreviated as "device driver"), a wireless setting application program (hereinafter

abbreviated as “wireless setting application”), and an image transfer application program (hereinafter abbreviated as “image transfer application”).” Ex. 1009, [0048]. Likewise, Uchida explains that wireless setting information from the remote controller is written to the computer device. Ex. 1009, [0048]. Dr. Almeroth also relies on the installed software (e.g., the image transfer application) in his opinions. Ex. 1002, ¶ 213. It is my opinion that Uchida does not provide an embodiment which does not rely on installing software and/or drivers.

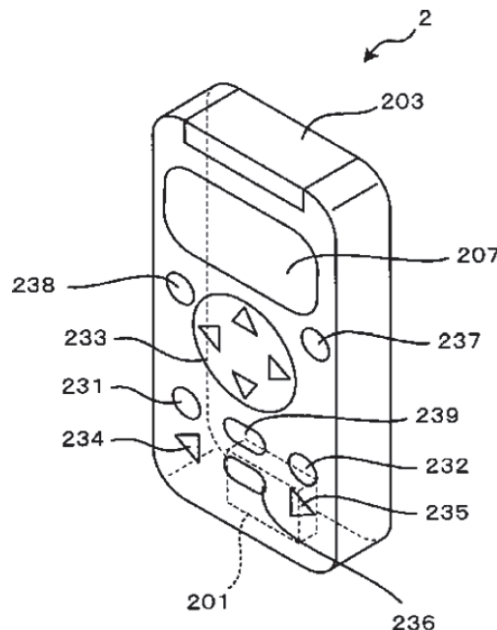
141. As Uchida requires installation of software applications and drivers, while Deforche discourages installation of software and drivers in favor of a zero-footprint implementation, it is my opinion that a POSITA would not be motivated to combine Uchida and Deforche.

ii. Uchida teaches away from the forcing rule of the '676 Patent

142. It is my opinion that Uchida teaches away from the subject matter of the '676 Patent. For example, claims of the '676 Patent include a limitation which describes “a forcing rule, wherein the forcing rule is that display on the one or more first displays of new screen scraped data is obtained by the action of only one participant involved in the meeting, without requiring the agreement of another participant, the new screen scraped data of any participant for display overrides or replaces any data displayed on the one or more first displays from the same or

another participant of the meeting”. Ex. 1001, Cl. 1. In addition to Claim 1, Claims 14 and 16 include similar limitations. Ex. 1001, Cls. 14, 16.

143. Uchida provides a remote control to manage the control functions of the projector. Ex. 1009, [0092], Figure 4 (reproduced below), [0013] (“[T]he present invention provides...a remote control device that remotely controls the operation of the image projection device.”).



Ex. 1009, Figure 4.

144. As shown in Figure 4, the remote control has operation buttons, including start-up control button 231, update button 232, cross key 233, left arrow key 234, right arrow key 235, enter key 236, information transmission button 237 for transmitting wireless setting information to image projection device 3, hold button 238, and wireless information setting button 239. Ex. 1009, [0092]. The

wireless information setting button writes the wireless setting information to wireless device. Ex. 1009, [0092]. The remote control also includes display unit 207, which displays setting information. Ex. 1009, [0113].

145. “The start-up control button 231 is a button for issuing start and stop instructions to the image projection device 3.” Ex. 1009, [0045]. The control of the operation of the image projection device is centralized with the remote control device. Ex. 1009, [0013] (“[T]he present invention provides...a remote control device that remotely controls the operation of the image projection device.”).

146. In a scenario where multiple computer devices transmit image data to the image projection device, it is necessary to write the same wireless setting information to the multiple wireless devices prior to connection. Ex. 1009, [0058]. Here, there are no issues that involve “multiple users vying for control.” Ex. 1002, ¶163. Rather, the start-up control button can be used to start and stop the image projection. Ex. 1009, [0045]; *see also* Ex. 1009, ¶13 (“[T]he present invention provides...a remote control device that remotely controls the operation of the image projection device.”). Dr. Almeroth uses a non-existent problem as a motivation.

147. The centralization of control with the remote control, explained in Paragraph 145, corresponds with Uchida’s intent to avoid inadvertent data transmission. For example, Uchida states that “even if an image projection device is used for a conference such as a presentation, and computer devices of an unspecified

number of participants are used, it is possible to prevent image data from being mistakenly sent from a computer device that has previously used the image projection device and then sent from the image projection device.” Ex. 1009, [0031].

148. In contrast to the concerns of Uchida which seeks to limit users ability to freely transfer content and avoid erroneous transmissions, the ’676 Patent is designed to allow for anyone to override a presenter. Accordingly, it is my opinion that Uchida teaches away from the ’676 Patent.

iii. A POSITA would not combine Uchida and Grimshaw

149. Dr. Almeroth opined that “moving or adding a button to Ono’s peripheral device would have predictably resulted in a system similar to Grimshaw allowing the user to present their display onto the projector.” Ex. 1002, ¶ 199. As explained above in Section VI.D.ii, it is my opinion that Uchida is designed to limit a user’s ability to freely transfer content in order to avoid erroneous transmissions. Accordingly, it is my opinion that a POSITA would not modify Uchida with teachings of Grimshaw, which allow for multiple users to override the display when they desire to.

iv. Ground 4 does not render obvious setting up a means for communication between the peripheral device and the processing device

150. Claim 1 of the ’676 Patent includes the limitation “setting up, by means of the pre-installed generic driver of the operating system, a means for

communication between the peripheral device and the processing device.” Ex. 1001, Cl. 1. It is my opinion that Uchida, Deforche, and Grimshaw do not render this limitation obvious.

151. First, it is my opinion that Dr. Almeroth has not applied the claim construction he identifies in Section VII.A of his declaration. Ex. 1002, ¶¶208-210. For example, I understand that the “means for communication” is referring to the communication between the computer device and the network via the connection unit (i.e. peripheral device). Ex. 1001, 20:35-50; Ex. 1002, ¶85. Dr. Almeroth identifies communications between a USB memory and the information terminal device, which communicates the driver, connection application, and driver. Ex. 1002, ¶208. This is not the means for communication between the information terminal and a network via the peripheral device as Dr. Almeroth identifies in Section VII.A of his declaration. To the extent Uchida discloses a similar means for communication, it is the communication involving the specific device driver installed onto the system. Ex. 1009, [0048].

152. Rather than showing that the claimed “means for communication” is set up by a pre-installed generic driver, Dr. Almeroth’s opines that a driver (which he opines is a pre-installed generic driver) is used to install a specific driver that is later used to set up the means for communication. Ex. 1005, [0048]. However, Dr. Almeroth’s identified driver does not, itself, set up the means for communication.

- v. Ground 4 does not render obvious an input device that triggers transfer of data, the input device being an actuator coupled to the peripheral device

153. Claim 4 of the '676 Patent includes the limitation “wherein the peripheral device has an actuator, the method further comprising a user action on the actuator that triggers transfer of the data for display from the processing device to the wireless transceiver and from there to the wireless communications network.” Ex. 1001, Cl. 4. Likewise, Claim 16 of the '676 Patent includes the limitation “an input device to allow the user to carry out a user action that triggers transfer of said user selected arbitrary media content from said processing device to a transmitter and to the wireless communications network, the input device being an actuator coupled to the peripheral device.” Ex. 1001, Cl. 16. It is my opinion that Uchida, Deforche, and Grimshaw do not teach this limitation.

154. First, as I identified in Section VI.C.ii, it is my opinion that neither Grimshaw nor Deforche teach this limitation. Additionally, Dr. Almeroth has not provided an opinion whether Deforche teaches this limitation. Ex. 1002, ¶¶198-257.

155. Second, For this element, Dr. Almeroth relies on Uchida’s image transfer stop switch. *See* Ex. 1002, ¶¶226-227. Uchida’s image transfer stop switch is a switch located on the wireless device. Ex. 1009, [0071]. The image transfer stop switch can slide between an image stop on mode and an image stop off mode. Ex. 1009, [0071]. When the image transfer stop switch is in the on mode, the computer

is notified that the image transfer stop switch is in the on mode. Ex. 1009, [0071]. Once this information is received, the computer transmits a request to the image projection device “to project a specific image (here, a black screen image) on the image projection 50 device 3.” Ex. 1009, [0071].

156. These steps prevent the presentation of data from the laptop, but it does not affect whether data is or is not transmitted from the wireless device to the projector. Ex. 1009, [0071]. This is because the image transfer stop switch is a safety switch, it does not a trigger and does not trigger content transfer.

157. Moreover, even if the image transfer stop switch stops all transfer to the wireless device, Uchida does not provide any disclosure to support the conclusion that the image display would resume signal transfer when turned to the image stop off mode. And, a POSITA would have actually understood the opposite because the image transfer stop switch is used to avoid unwanted image transfer. Ex. 1009, [0012], [0031] (“Thus, even if an image projection device is used for a conference such as a presentation, and computer devices of an unspecified number of participants are used, it is possible to prevent image data from being mistakenly sent from a computer device that has previously used the image projection device and then sent from the image projection device.”). Uchida’s identified stop and start instructions originating from the remote control are the only means that trigger image projection. Ex. 1009, [0045].

- vi. Ground 4 does not render obvious running a program without installation of the program or configuration of the processing device

158. Claim 18 includes the limitation “wherein running said program does not require installation of the program or configuration of the processing device.” Ex. 1001, Cl. 18. Claim 19 includes the same limitation. Ex. 1001, Cl. 19. Likewise, Claim 20 includes the limitation “a program adapted to be loaded onto the processing device and to run on an operating system of the processing device.” Ex. 1001, Cl. 20. It is my opinion that Ono and Deforche do not render this limitation obvious.

159. For example, Uchida specifically requires installation of a device driver, a wireless setting application, and an image transfer application, as well as wireless setting information needing to be written to the computer. Ex. 1009 [0048].

E. The Barco System Embodies the Claims of the '676 Patent

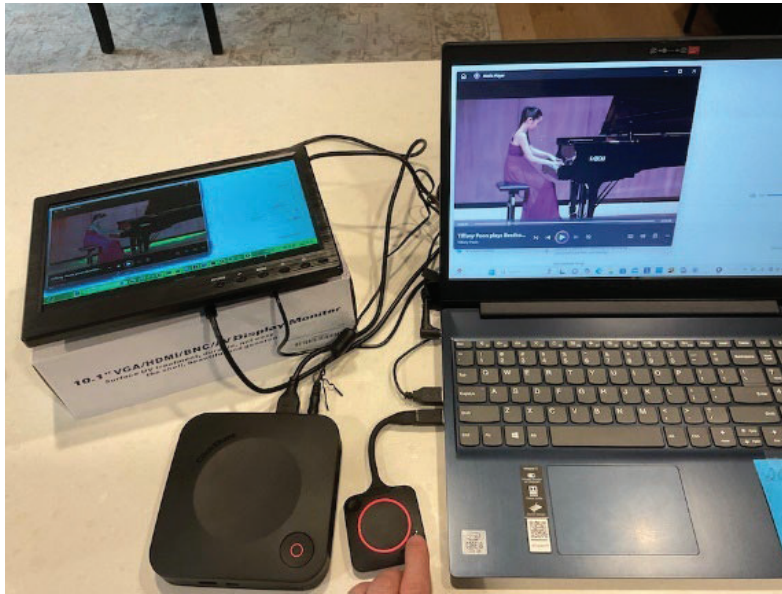
160. I have been asked to analyze the Barco System and provide my opinion as to whether the Barco System embodies the claims of the '676 Patent. The Barco System refers to the combination of the ClickShare Button and a ClickShare Base. The ClickShare Base include at least the C-5, C-10, CX-20, CX-30, CX-50, CX-50 Gen2, CB Core, and CB Pro. As detailed herein, it is my opinion that the Barco System embodies at least claims 1, 4, 5, 8, 18, 19, and 20 of the '676 Patent.

i. The Barco System practices Claim 1 of the '676 Patent

a. The Barco System practices 1[pre] of the '676 Patent

161. The Barco System practices 1[pre], which recites: “A method for connecting one or more processing devices, each processing device being a user device of one participant in a meeting with a plurality of participants, to a wireless communications network having a base node with one or more first displays, the one or more processing devices each having a memory, a second display and an operating system with at least one pre-installed generic driver providing a generic communications protocol for communication between the processing device and a class of peripheral devices, the method comprising the following steps for each processing device.”

162. The Barco System includes a base node (e.g., a Barco Base) connected to one or more displays. In the example shown below, with the Clickshare Button, the Barco Base provides a method for connecting one or more processing devices to the display to display screen scraped content:



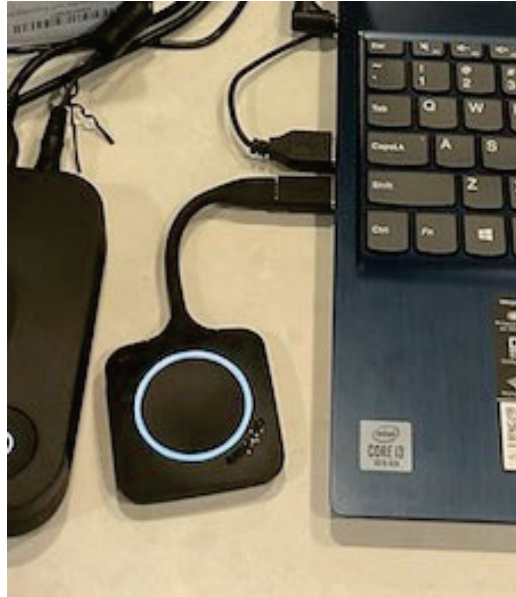
163. A laptop, as the processing device, includes a memory, display, and operating systems with pre-installed generic drivers. Moreover, the laptop communicates with a class of peripheral devices. The peripheral devices can be a USB device as a standard class of peripheral devices driven by pre-installed generic drivers.

b. The Barco System practices 1[a] of the '676 Patent

164. The Barco System practices claim element 1[a], which recites: “a) coupling a peripheral device to the processing device, the peripheral device having a wireless transceiver.”

165. The Barco System includes ClickShare Button, which is a peripheral device. This device is capable of coupling physically a port of the processing device

(i.e., the laptop). In the example shown below, the Clickshare Button includes a USB interface which plugs into a laptop as the processing device.



166. Additionally, Clickshare Button includes both a wireless transceiver and a connector configured to couple to the port of the processing device. For example, ClickShare Button's wireless transceiver includes Wi-Fi (IEEE 802.11 a/b/g/n/ac) capabilities as its transmission protocol, and ClickShare Button's connector includes a USB interface.

General specifications

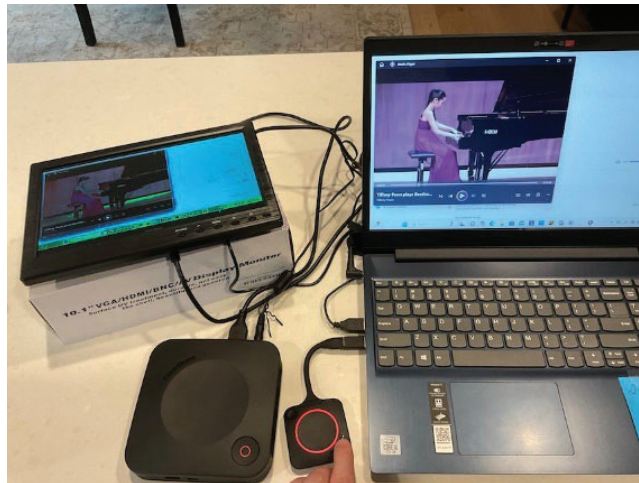
Connectors	USB-C type
Authentication protocol	WPA2-PSK in stand alone mode WPA2-PSK or IEEE 802.1X in network integration mode
Wireless transmission protocol	IEEE 802.11 a/b/g/n/ac
Frequency band	2.4 GHZ and 5 GHz

Ex. 2014.

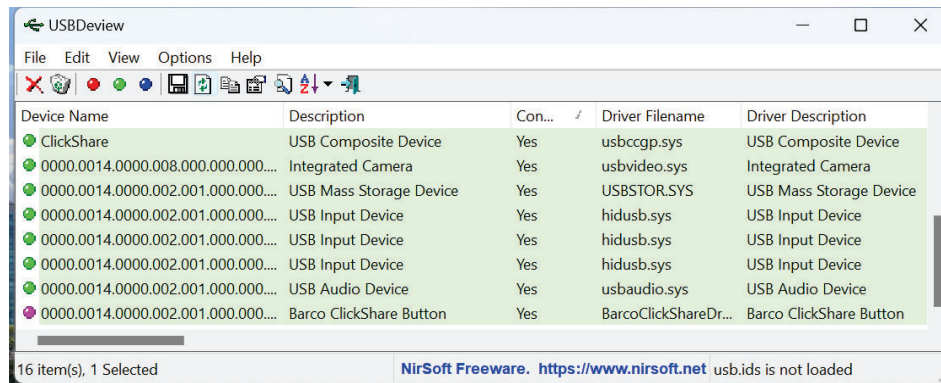
c. The Barco System practices 1[b] of the '676 Patent

167. The Barco System practices claim element 1[b], which recites: “b) setting up, by means of the pre-installed generic driver of the operating system, a means for communication between the peripheral device and the processing device.”

168. As shown in the example below, the Barco System sets up a means for communication with ClickShare Button as evidenced by the content being shared on the base node:



169. Using the USBDeview tool, I confirmed that the Barco System provides the means for communication using pre-installed generic drivers. For example, as shown below the ClickShare button exposes itself on as multiple devices, including a human interface device (USB input device) which uses the pre-installed generic driver hidusb.sys:



170. The USBDeview is a free tool available from https://www.nirsoft.net/utls/usb_devices_view.html. I downloaded this tool and used it to inspect devices connected to my laptop computer. For each USB device, I am able to see the device name/description, device type, drivers, as well as some other related information.

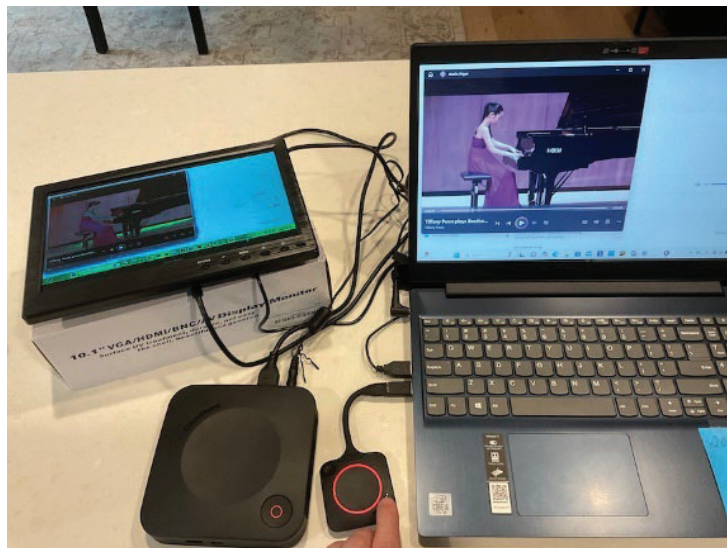
171. I have also confirmed that the ClickShare Button communicates display data using the human interface device. For example, using the USBDeview tool I disabled the audio device and mass storage device exposed by the ClickShare Button and the display data was still communicated to the display connected to the Barco Base. However, when I disabled an input device using the USBDeview tool, the display was no longer shared to the display connected to the Barco Base.

d. The Barco System practices 1[c] of the '676 Patent

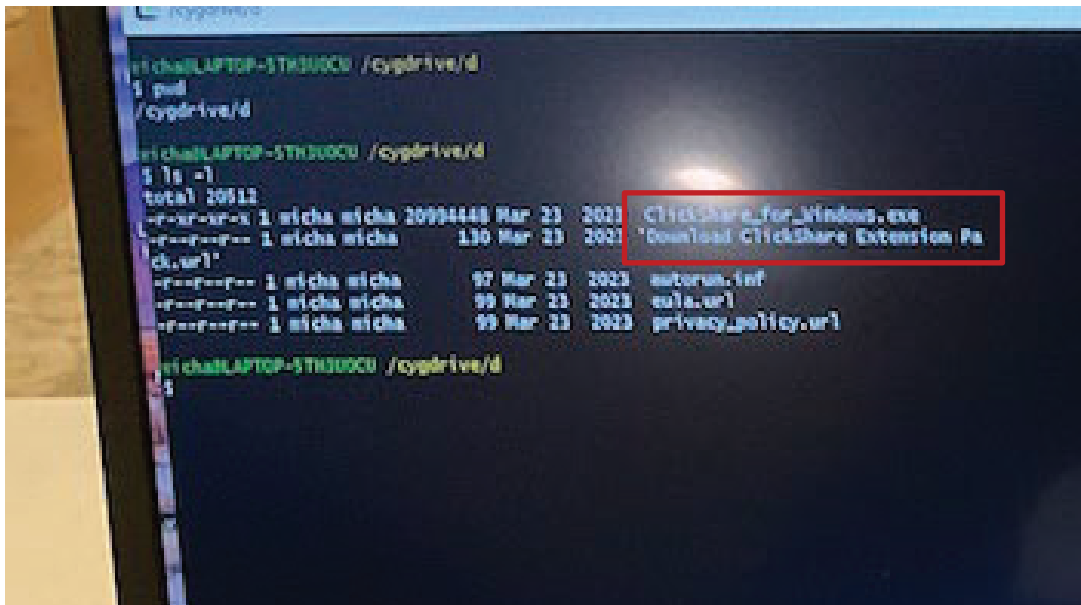
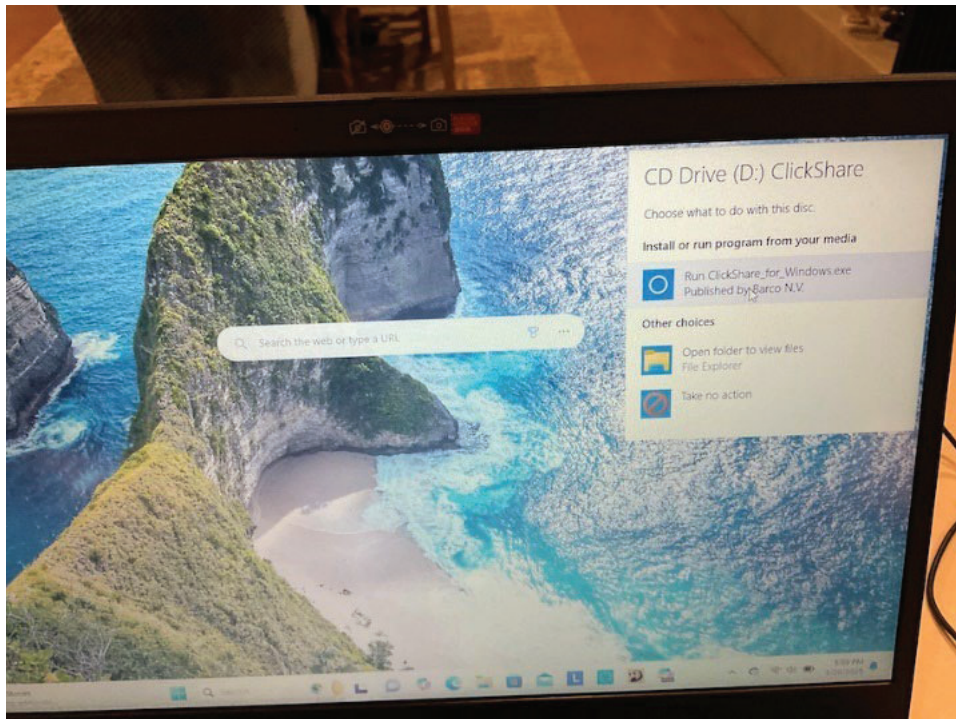
172. The Barco System practices claim element 1[c], which recites: “c) coupling the processing device to the wireless communications network via the

peripheral device; running a client application stored on the peripheral device to obtain screen scraped data.”

173. As shown in the example below, ClickShare button couples the processing device to the wireless communications network, as evidenced by the screen scraped data available on the display connected to the base node:



174. Barco System also includes a client application stored on ClickShare Button capable of obtaining this data. As shown in the examples below, ClickShare Button provides an executable file (the client application) when it is connected to a laptop computer:

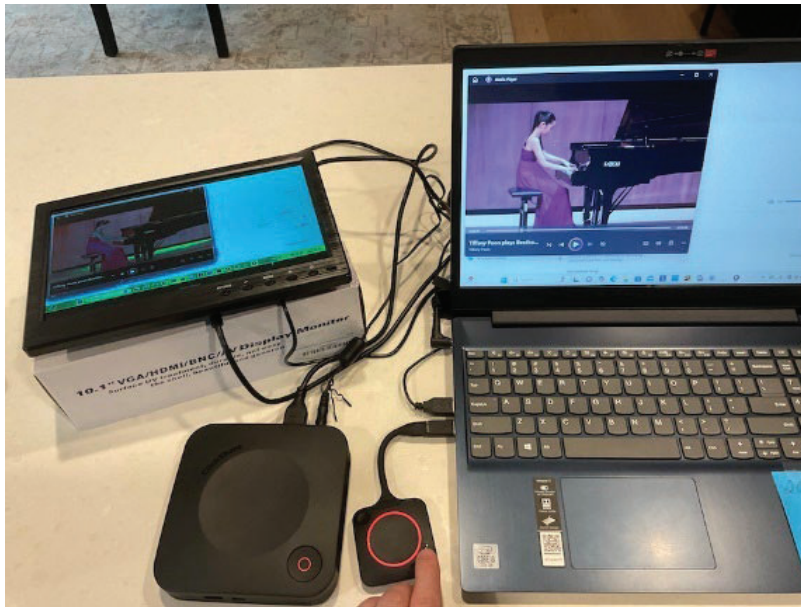


e. The Barco System practices 1[d] of the '676 Patent

175. The Barco System practices claim element 1[d], which recites: “d) routing the screen scraped data between the processing device and the wireless communications network via the means for communication for display on the one

or more first displays of the base node, wherein the generic communication protocol is used for transferring the screen scraped data for display between the processing device and the peripheral device.”

176. As shown in the example below and as referenced in ¶¶169-171, screen scraped data is shared via the USB interface using a generic communications protocol and is routed between the processing device and the wireless communications network via the means for communication:



177. Further, content is communicate to the Barco Base even when the processing device is not connected to any other networks, which evidence that the processing device is connected to the communications network via the transceiver.

f. The Barco System practices 1[e] of the '676 Patent

178. The Barco System practices claim element 1[e], which recites: “e) obtaining electronic access to the one or more first displays for display of the screen scraped data.”

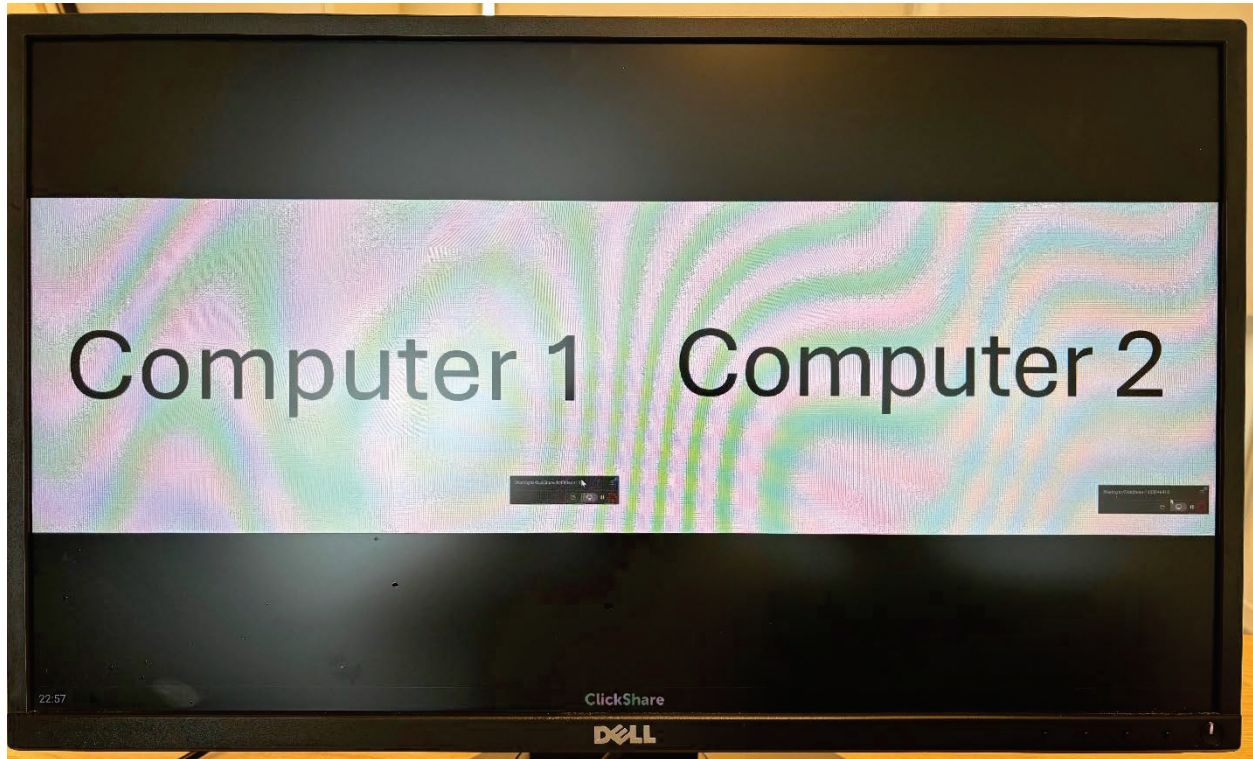
179. For example, electronic access to the display is shown in ¶¶176-177.

g. The Barco System practices 1[f] of the '676 Patent

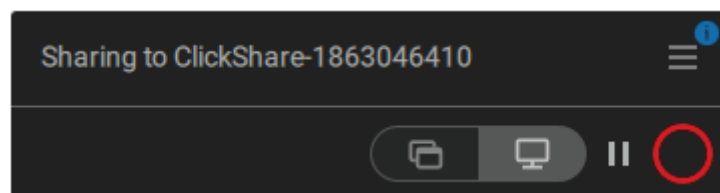
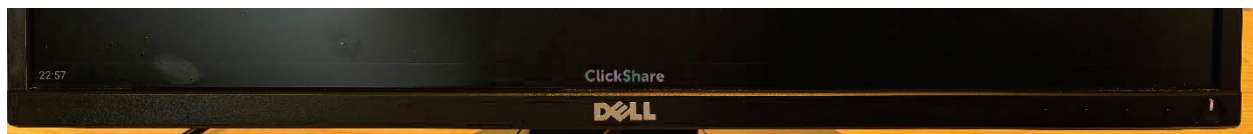
180. The Barco System practices claim element 1[f], which recites: “the method further comprising: displaying the screen scraped data on the one or more first displays in accordance with a set of rules, one of the rules being a forcing rule, wherein the forcing rule is that display on the one or more first displays of new screen scraped data is obtained by the action of only one participant involved in the meeting, without requiring the agreement of another participant, the new screen scraped data of any participant for display overrides or replaces any data displayed on the one or more first displays from the same or another participant of the meeting.”

181. As shown in the example below, the Barco System is capable of displaying screen scraped data in accordance with the forcing rule. I was able to, using two laptop computers, share content from a first laptop computer using one ClickShare Button (connected to “Computer 1”) and override a portion of Computer

1's content from a second laptop computer using a second ClickShare Button (connected to "Computer 2") without agreement of Computer 1:



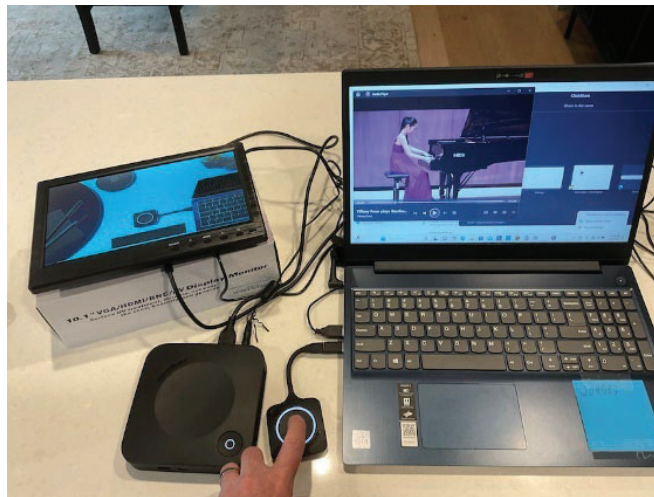
182. It is clear that the Barco system was used to perform this process because of the "ClickShare" label at the bottom of the screen and the GUI shown in each screen scraped image:

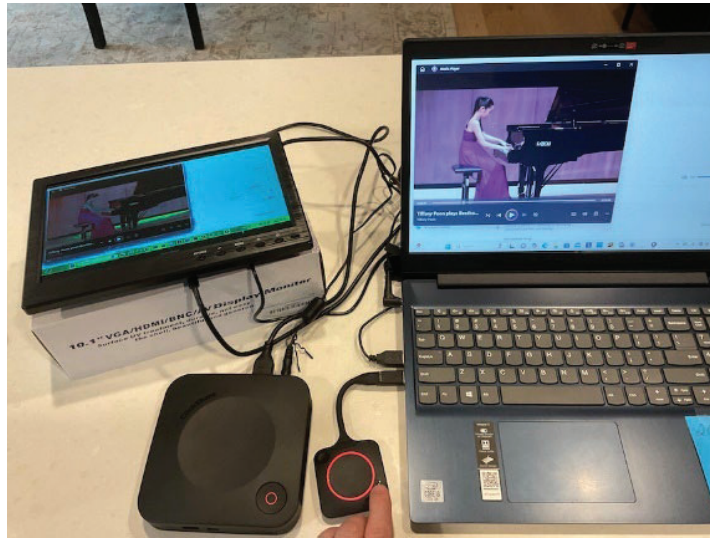


ii. The Barco System practices Claim 4 of the '676 Patent

183. The Barco System practices claim 4, which recites: “The method of claim 1, wherein the peripheral device has an actuator, the method further comprising a user action on the actuator that triggers transfer of the data for display from the processing device to the wireless transceiver and from there to the wireless communications network.”

184. As shown in the two images below, the actuator of ClickShare Button, when it receives a user action, triggers transfer of data for display from the processing device to the wireless transceiver and from the wireless transceiver to the wireless communications network:

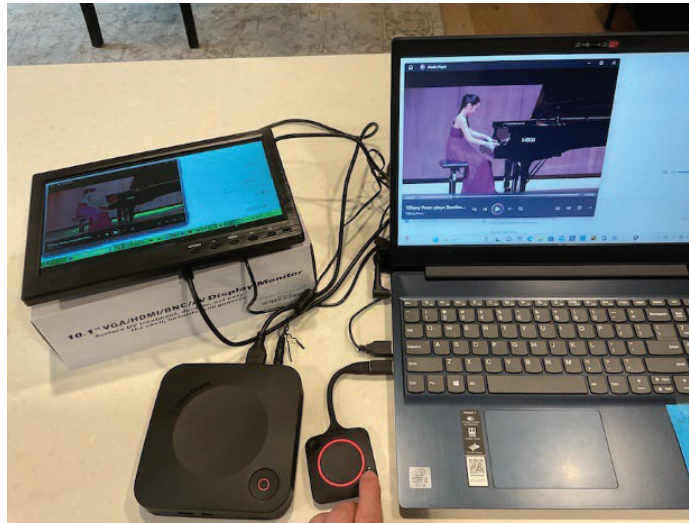




iii. The Barco System practices Claim 5 of the '676 Patent

185. The Barco System practices claim 5, which recites: “the method of claim 1, wherein step b) is selected from: presenting the peripheral device to the processing device as a human interface device and wherein the pre-installed generic driver is a human interface device driver; presenting the peripheral device to the processing device as a mass storage device and wherein the pre-installed generic driver is a mass storage device driver; and presenting the peripheral device to the processing device as a composite device and wherein pre-installed generic drivers drive different device interfaces independently.”

186. The Barco System practices claim 5 for the same reasons as discussed in ¶167 to 171.



iv. The Barco System practices Claim 8 of the '676 Patent

187. The Barco System practices claim 8, which recites: “The method of claim 1, wherein the transferring of the data for display is to a defined network node without user entry of configuration details.” The Barco System connected the laptop computer to the Barco Base without needing input of configuration details.

v. The Barco System practices Claim 14 of the '676 Patent

188. The Barco System practices claim 14 for the same reasons as discussed in ¶¶161 to 182.

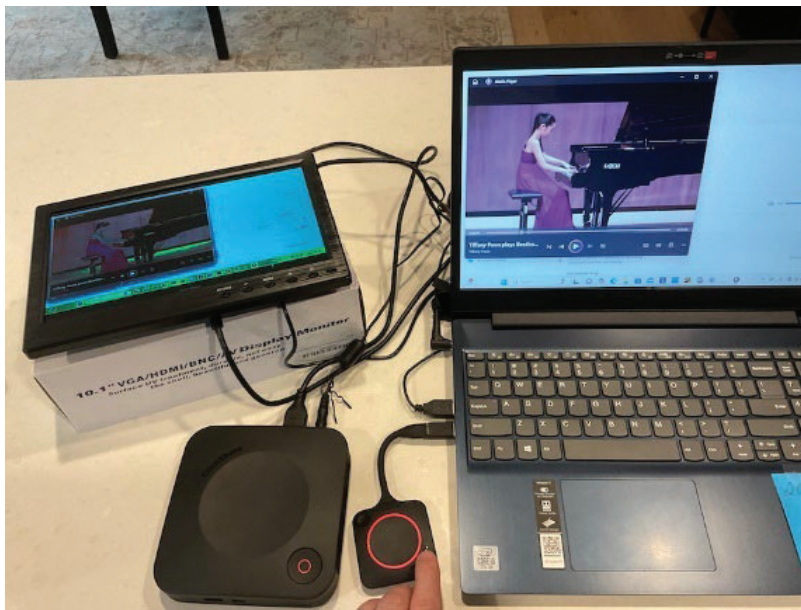
vi. The Barco System practices Claim 16 of the '676 Patent

189. The Barco System practices claim 16 for the same reasons as discussed in ¶¶161 to 182.

190. In addition, the Barco System also includes “a base unit of a wireless communications network, the base unit being coupled to one or more first displays, the base unit being adapted to receive user selected arbitrary media content from a

processing device via the wireless communications network, and to control display of the user selected arbitrary media content on the one or more first displays.”

191. As shown in the example below, the Barco Base receive arbitrary media content from the laptop computer via the wireless communications network and controls its display:



vii. The Barco System practices Claims 18 of the '676 Patent

192. The Barco System practices claim 18, which recites: “The method according to claim 1, wherein running said program does not require installation of the program or configuration of the processing device.”

193. For example, the Barco System screen scrapes data without installation of the program or configuration on the processing device by using a portable application.

viii. The Barco System practices Claims 19 of the '676 Patent

194. The Barco System practices claim 19 for the same reasons as discussed in ¶¶192 to 193.

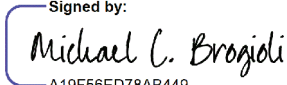
ix. The Barco System practices Claims 20 of the '676 Patent

195. The Barco System practices claim 19 for the same reasons as discussed in ¶¶172 to 174 and 192 to 193.

VII. CONCLUSION

196. I declare that all statements made herein of my knowledge are true and that all statements made on information and belief are believed to be true. I also declare that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. §1001. I declare under the penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Dated: 7/16/2025

By:  Signed by:
A19F56ED78AB449...
Michael C. Brogioli, Ph.D.