

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

Petitioners,

v.

BARCO N.V.

Patent Owner

U.S. Patent No. 11,422,951

IPR2024-1439

**DECLARATION OF KEVIN C. ALMEROOTH, PH.D.,
IN SUPPORT OF PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 11,422,951**

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I, Kevin C. Almeroth Ph.D., declare as follows:

I. INTRODUCTION

1. I have been retained by Yealink (USA) Network Technology Co., Ltd. and Yealink Network Technology Co., Ltd. (collectively, “Petitioners”) as an independent expert consultant in this proceeding before the United States Patent and Trademark Office (“PTO”) regarding U.S. Patent No. 11,422,951 (“the ’951 patent”) (EX-1001).

2. My name is Kevin C. Almeroth and I am a Professor Emeritus of Computer Science at the University of California, Santa Barbara. I have prepared this declaration as an expert witness on behalf of Petitioners. In this declaration, I will give my opinion as to whether claims 1-11 and 13-21 of the ’951 patent are unpatentable. I also provide herein the technical bases for these opinions, as appropriate.

3. For my efforts in connection with the preparation of this declaration, I have been compensated at my usual and customary rate for this type of consulting activity. My compensation is in no way contingent on the outcome of these or any other proceedings.

4. I have been asked to consider whether certain references disclose or suggest the features recited in claims 1-11 and 13-21 of the ’951 patent. My opinions are set forth below.

II. QUALIFICATIONS / PROFESSIONAL BACKGROUND

5. I am currently a Professor Emeritus in the Department of Computer Science at the University of California, Santa Barbara (UCSB). All of my opinions stated in this declaration are based on my own personal knowledge and professional judgment. In forming my opinions, I have relied on my knowledge and experience in designing, developing, researching, and teaching regarding computer networks and protocols, wireless networking, multicast communication, large-scale multimedia systems, and mobile applications.

6. I am over 18 years of age and, if I am called upon to do so, I would be competent to testify as to the matters set forth herein. I understand that a copy of my current curriculum vitae, which details my education and professional and academic experience, is being submitted by Petitioner as Exhibit 1003. The following provides an overview of some of my experience that is relevant to the matters set forth in this declaration.

7. While at UCSB, I have held faculty appointments and was a founding member of the Computer Engineering (CE) Program, Media Arts and Technology (MAT) Program, and the Technology Management Program (TMP). I have also served as the Associate Director of the Center for Information Technology and

Society (CITS) from 1999 to 2012. I have been a faculty member at UCSB since July 1997.

8. I hold three degrees from the Georgia Institute of Technology: (1) a Bachelor of Science degree in Information and Computer Science (with minors in Economics, Technical Communication, and American Literature) earned in June 1992; (2) a Master of Science degree in Computer Science (with specialization in Networking and Systems) earned in June 1994; and (3) a Doctor of Philosophy (Ph.D.) degree in Computer Science (Dissertation Title: Networking and System Support for the Efficient, Scalable Delivery of Services in Interactive Multimedia System, minor in Telecommunications Public Policy) earned in June 1997. During my education, I took a wide variety of courses as demonstrated by my minors. My undergraduate degree also included a number of courses more typical of a degree in electrical engineering including digital logic, signal processing, and telecommunications theory.

9. One of the major concentrations of my research over the past 30+ years has been the delivery of multimedia content and data between computing devices, including through various network architectures. In my research, I have studied large-scale content delivery systems, and the use of servers located in a variety of geographic locations to provide scalable delivery to hundreds or thousands of users simultaneously. I have also studied smaller-scale content delivery systems in which

content is exchanged between individual computers and portable devices. My work has emphasized the exchange of content more efficiently across computer networks, including the scalable delivery of content to many users, mobile computing, satellite networking, delivering content to mobile devices, and network support for data delivery in wireless networks.

10. In 1992, the initial focus of my research was on the provision of interactive functions (e.g., VCR-style functions like pause, rewind, and fast-forward) for near video-on-demand systems in cable systems; in particular, how to aggregate requests for movies at a cable head-end and then how to satisfy a multitude of requests using one audio/video stream broadcast to multiple receivers simultaneously. This research has continually evolved and resulted in the development of techniques to scale the delivery of on-demand content, including audio, video, web documents, and other types of data, through the Internet and over other types of networks, including over cable systems, broadband telephone lines, and satellite links.

11. An important component of my research has been investigating the challenges of communicating multimedia content, including video, between computers and across networks including the Internet. Although the early Internet was used mostly for text-based, non-real time applications, the interest in sharing multimedia content, such as video, quickly developed. Multimedia-based

applications ranged from downloading content to a device to streaming multimedia content to be instantly used. One of the challenges was that multimedia content is typically larger than text-only content, but there are also opportunities to use different delivery techniques since multimedia content is more resilient to errors. I have worked on a variety of research problems and used a number of systems that were developed to deliver multimedia content to users. One content-delivery method I have researched is the one-to-many communication facility called “multicast,” first deployed as the Multicast Backbone, a virtual overlay network supporting one-to-many communication. Multicasting is one technique that can be used on the Internet to provide streaming media support for complex applications like video-on-demand, distance learning, distributed collaboration, distributed games, and large-scale wireless communication. The delivery of media through multicasting often involves using Internet infrastructure, devices and protocols, including protocols for routing and TCP/IP.

12. Starting in 1997, I worked on a project to integrate the streaming media capabilities of the Internet together with the interactivity of the web. I developed a project called the Interactive Multimedia Jukebox (IMJ). Users would visit a web page and select content to view. The content would then be scheduled on one of a number of channels, including delivery to students in Georgia Tech dorms delivered

via the campus cable plant. The content of each channel was delivered using multicast communication.

13. In the IMJ, the number of channels varied depending on the capabilities of the server including the available bandwidth of its connection to the Internet. If one of the channels was idle, the requesting user would be able to watch their selection immediately. If all channels were streaming previously selected content, the user's selection would be queued on the channel with the shortest wait time. In the meantime, the user would see what content was currently playing on other channels, and because of the use of multicast, would be able to join one of the existing channels and watch the content at the point it was currently being transmitted.

14. The IMJ service combined the interactivity of the web with the streaming capabilities of the Internet to create a jukebox-like service. It supported true Video-on-Demand when capacity allowed, but scaled to any number of users based on queuing requested programs. As part of the project, we obtained permission from Turner Broadcasting to transmit cartoons and other short-subject content. We also connected the IMJ into the Georgia Tech campus cable television network so that students in their dorms could use the web to request content and then view that content on one of the campus's public access channels.

15. More recently, I have also studied issues concerning how users choose content, especially when considering the price of that content. My research has examined how dynamic content pricing can be used to control system load. By raising prices when systems start to become overloaded (*i.e.*, when all available resources are fully utilized) and reducing prices when system capacity is readily available, users' capacity to pay as well as their willingness can be used as factors in stabilizing the response time of a system. This capability is particularly useful in systems where content is downloaded or streamed on-demand to users.

16. As a parallel research theme, starting in 1997, I began researching issues related to wireless devices and sensors. In particular, I was interested in showing how to provide greater communication capability to "lightweight devices," *i.e.*, small form-factor, resource-constrained (*e.g.*, CPU, memory, networking, and power) devices. Starting in 1998, I published several papers on my work to develop a flexible, lightweight, battery-aware network protocol stack. The lightweight protocols we envisioned were similar in nature to protocols like Bluetooth, Universal Plug and Play (UPnP) and Digital Living Network Alliance (DLNA).

17. From this initial work, I have made wireless networking—including ad hoc, mesh networks and wireless devices—one of the major themes of my research. My work in wireless networks spans the protocol stack from applications through to the encoding and exchange of data at the data link and physical layers.

18. At the application layer, even before the large-scale “app stores” were available, my research looked at building, installing, and using apps for a variety of purposes, from network monitoring to support for traditional computer-based applications (*e.g.*, content retrieval) to new applications enabled by ubiquitous, mobile devices. For example, my research has looked at developing applications for virtually exchanging and tracking “coupons” through “opportunistic contact” among mobile wireless devices (*i.e.*, communication among devices moving into communication range with each other). In many of the courses I have taught there is a project component. Through these projects I have supervised numerous efforts to develop new “apps” for download and use across a variety of mobile platforms.

19. Toward the middle of the protocol stack, my research has also looked to build wireless infrastructure support to enable communication among a set of mobile devices unaided by any other kind of network infrastructure. These kinds of networks are useful either in challenged network environments (*e.g.*, when a natural disaster has destroyed existing infrastructure) or when suitable support for network communication never existed. The deployment of such networks (or even the use of traditional network support) are critical to support services like disaster relief, catastrophic event coordination, and emergency services deployment.

20. Yet another theme of my research has been monitoring wireless networks, in particular different variants of IEEE 802.11 compliant networks, to (1)

understand the operation of the various protocols used in real-world deployments, (2) use these measurements to characterize use of the networks and identify protocol limitations and weaknesses, and (3) propose and evaluate solutions to these problems. I have successfully used monitoring techniques to study wireless data link layer protocol operation and to improve performance by enhancing the operation of such protocols. For wireless protocols, this research includes functions like network acquisition and channel bonding.

21. One theme in my wireless network research has been cross-layer solutions and innovations. As mentioned above, with greater wireless device use and network support, we envisioned new application paradigms and services, for example, when mobile devices come into contact with each other. Instead of relying on existing infrastructure to relay communication, mobile devices are able to discover each other and communicate directly. Other examples include discovering and using location information to enhance users' experiences. Network support and novel applications span the use of a variety of network architectures supporting users on foot, in vehicles, and across varying terrains and environments. Finally, we studied how communication efficiency can be supported through intelligent handoffs as well as location and movement prediction.

22. Protecting networks, including their operation and content, has been an underlying theme of my research almost since the beginning of my research career.

Since 2000, I have been involved in several projects that specifically address security, network protection, and firewalls. After significant background work, a team on which I was a member successfully submitted a \$4.3M grant proposal to the Army Research Office (ARO) at the Department of Defense to propose and develop a high-speed intrusion detection system. Key aspects of the system included associating streams of packets and analyzing them for viruses and other malware. Once the grant was awarded, we spent several years developing and meeting the milestones of the project. Several of my students worked on related projects and published papers on topics ranging from intrusion detection to developing advanced techniques to be incorporated into firewalls. I have also used firewalls, including their associated malware detection features, in developing techniques for the classroom to ensure that students are not distracted by online content.

23. My recent work ties some of the various threads of my past research together. I have investigated content delivery in online social networks and proposed reputation management systems in large-scale social networks and marketplaces. On the content delivery side, I have looked at issues of caching and cache placement, especially when content is shared and the cache has geographical relevance. We were able to show that effective caching strategies can greatly improve performance and reduce deployment costs.

24. As an important component of my research program, I have been involved in the development of academic research into available technology in the marketplace. One aspect of this work is my involvement in the Internet Engineering Task Force (IETF). The IETF is a large and open international community of network designers, operators, vendors, and researchers concerned with the evolution of Internet architecture and the smooth operation of the Internet. I have been involved in various IETF groups including content delivery-related working groups like the Audio Video Transport (AVT) group, the MBone Deployment (MBONED) group, Source Specific Multicast (SSM) group, the Inter-Domain Multicast Routing (IDMR) group, the Reliable Multicast Transport (RMT) group, the Protocol Independent Multicast (PIM) group, etc. I have also served as a member of the Multicast Directorate (MADDOGS), which oversaw the standardization of all things related to multicast in the IETF. Finally, I was the Chair of the Internet2 Multicast Working Group for seven years.

25. My involvement in the research community extends to leadership positions for several academic journals and conferences. I am the co-chair of the Steering Committee for the ACM Network and System Support for Digital Audio and Video (NOSSDAV) workshop and on the Steering Committees for the International Conference on Network Protocols (ICNP), ACM Sigcomm Workshop on Challenged Networks (CHANTS), and IEEE Global Internet (GI) Symposium. I

have served or am serving on the Editorial Boards of IEEE/ACM Transactions on Networking, IEEE Transactions on Mobile Computing, IEEE Network, ACM Computers in Entertainment, AACE Journal of Interactive Learning Research (JILR), and ACM Computer Communications Review. I have co-chaired a number of conferences and workshops including the IEEE International Conference on Network Protocols (ICNP), IEEE Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON), International Conference on Communication Systems and Networks (COMSNETS), IFIP/IEEE International Conference on Management of Multimedia Networks and Services (MMNS), the International Workshop On Wireless Network Measurement (WiNMee), ACM Sigcomm Workshop on Challenged Networks (CHANTS), the Network Group Communication (NGC) workshop, and the Global Internet Symposium, and I have served on the program committees for numerous conferences.

26. Furthermore, in the courses I taught at UCSB, a significant portion of my curriculum covered aspects of the Internet and network communication including the physical and data link layers of the Open System Interconnect (OSI) protocol stack, and standardized protocols for communicating across a variety of physical media such as cable systems, telephone lines, wireless, and high-speed Local Area Networks (LANs). The courses I have taught also cover most major topics in Internet communication, including data communication, multimedia

encoding, and mobile application design. My research and courses have covered a range of physical infrastructures for delivering content over networks, including cable, Integrated Services Digital Network (ISDN), Ethernet, Asynchronous Transfer Mode (ATM), fiber, and Digital Subscriber Line (DSL). For a complete list of courses I have taught, see my curriculum vitae (CV) (EX-1003).

27. In addition, I co-founded a technology company called Santa Barbara Labs that was working under a sub-contract from the U.S. Air Force to develop very accurate emulation systems for the military's next generation internetwork. Santa Barbara Labs' focus was in developing an emulation platform to test the performance characteristics of the network architecture in the variety of environments in which it was expected to operate, and, in particular, for network services including IPv6, multicast, Quality of Service (QoS), satellite-based communication, and security. Applications for this emulation program included communication of a variety of multimedia-based services, including video conferencing and video-on-demand.

28. In addition to having co-founded a technology company myself, I have worked for, consulted with, and collaborated with companies for nearly 30 years. These companies range from well-established companies to start-ups and include IBM, Hitachi Telecom, Turner Broadcasting System (TBS), Bell South, Digital Fountain, RealNetworks, Intel Research, Cisco Systems, and Lockheed Martin.

29. Through my graduate education, leadership with CITS, involvement in TMP, role in the development of the Internet2 infrastructure, and consulting with ISPs, I have gained a strong understanding in the role of the Internet in our society and the challenges of deploying large-scale production networking infrastructure. CITS, since its inception, has looked at the role of the Internet in society, including how the evolution of technology have created communication opportunities and challenges, including, for example through disruptive technologies like P2P. TMP looks to focus on non-purely technical issues, including, for example, state-of-the-art business methods, strategies for successful technology commercialization, new venture creation, and best practices for fostering innovation. Through my industry collaborations and Internet2 work, I have developed significant experience in the challenges of deploying, monitoring, managing, and scaling communication infrastructure to support evolving Internet services like streaming media, conferencing, content exchange, social networking, and e-commerce.

30. I am a Member of the Association of Computing Machinery (ACM) and a Fellow of the Institute of Electrical and Electronics Engineers (IEEE).

III. MATERIALS REVIEWED

31. The opinions contained in this Declaration are based on the documents I reviewed, my professional judgment, as well as my education, experience, and

knowledge regarding, for example, electronic meeting tools, methods of displaying media content, audiovisual display systems, wireless network communication, user interfaces, plug-and-play architectures, and video conferencing applications.

32. In forming my opinions expressed in this Declaration, I reviewed the following materials and information:

EXHIBIT	DESCRIPTION
EX-1001	U.S. Patent No. 11,422,951
EX-1003	Curriculum Vitae of Kevin C. Almeroth, Ph.D.
EX-1004	File History of U.S. Patent No. 11,422,951
EX-1005	U.S. Patent Application Publication No. 2005/0210390 (“Ono”)
EX-1006	U.S. Patent Application Publication No. 2008/0074560 (“Ichieda”)
EX-1007	U.S. Patent Application Publication No. 2006/0069840 (“Corbett”)
EX-1008	U.S. Patent Application Publication No. 2011/0096138 (“Grimshaw”)
EX-1009	English Translation of Japanese Patent Application Publication No. 2008-165007 (“Uchida”)
EX-1010	Japanese Patent Application Publication No. 2008-165007
EX-1011	Certification for English Translation of Japanese Patent Application Publication No. 2008-165007
EX-1012	U.S. Provisional Application No. 61/255,326 (“Grimshaw Provisional”)
EX-1013-1019	RESERVED
EX-1020	U.S. Patent Application Publication No. 2010/0087139 (“Glass”)

EX-1021	U.S. Patent Application Publication No. 2009/0198839 (“Banerjee”)
EX-1022	U.S. Patent Application Publication No. 2011/0115689 (“Sugiyama”)
EX-1023	U.S. Patent Application Publication No. 2009/0187687 (Hulbert”)
EX-1024	U.S. Patent Application Publication No. 2003/0112975 (“Taiwanese”)
EX-1025	U.S. Patent Application Publication No. 2010/0017744 (Kikuchi”)
EX-1026	U.S. Patent Application Publication No. 2009/0172219 (“Mardiks”)
EX-1027	U.S. Patent Application Publication No. 2010/0295994 (“Kaplan”)
EX-1028	U.S. Patent Application Publication No. 2003/0098819 (“Sukthankar”)
EX-1029	U.S. Patent Application Publication No. 2002/0159419 (“Morris”)
EX-1030	EP Patent Application Publication No. 2107463 (“Deforche”)
EX-1031	JP Patent Application Publication No. 2007-208606 (“Maeda”)
EX-1032	RESERVED
EX-1033	U.S. Patent Application Publication No. 2002/0196378 (“Slobodin”)
EX-1034	U.S. Patent Application Publication No. 2002/0174254 (“Kita”)
EX-1035-1049	RESERVED
EX-1050	Imation Wireless Projection Link User Guide
EX-1051	EZAir Press Release, “EZAir Wireless PC to TV Solutions Now Available Across Europe,” March 16, 2011
EX-1052	Warpia Product Brief, “Wireless USB PC to TV Audio/Video Display Adapter,” 2009
EX-1053	Q-Waves Product Overview, “Quicklink TV,” November 2010

EX-1054	IOGear Installation Guide, “Wireless USB to VGA Kit,” 2008
EX-1055	JP Patent Application Publication No. 2007-208606
EX-1056	Certification for English Translation of JP Patent Application Publication No. 2007-208606
Ex-1057-1065	RESERVED
EX-1066	Excerpt from File History of Ex Parte Reexamination 90/014,087

33. I also reviewed any other materials I refer to in this Declaration in support of my opinions.

34. My opinions contained in this declaration are based on the documents I reviewed and my knowledge and professional judgment. My opinions have also been guided by my appreciation of how a person of ordinary skill in the art (“POSITA”) would have understood the state of the art, the teachings of the prior art, and the claim terms and the specification of the ’951 patent at the time of the alleged invention. My opinions reflect how a person having ordinary skill in the art (which I have described below) would have understood the ’951 patent, the prior art, the knowledge of a POSITA and the state of the art at the time of the alleged invention. I have been asked to initially consider that the time of the alleged invention of the ’951 patent is around September 14, 2011 (the earliest date to which the ’951 patent claims the benefit of priority). However, even if a modestly earlier or later date were selected it would not alter my opinions.

35. Based on my experience and expertise, it is my opinion that the prior art discloses and/or suggests all the features recited in challenged claims 1-11 and 13-21 of the '951 patent, as I discuss in detail below.

IV. LEVEL OF ORDINARY SKILL IN THE ART

36. In determining the skills of a hypothetical POSITA of the '951 patent at the time of the claimed invention, I considered several things, including various prior art techniques for screen scraping, wireless transmission of media content, wireless networking, user input/control, and peripheral device interfaces. I also considered the type of problems that such techniques gave rise to and the rapidity with which innovations were made. I also considered the sophistication of the technologies involved and the educational background and experience of those actively working in the field.

37. For the purposes of my analysis, I have been asked to assume that a POSITA in the field of art of the '951 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. Additional educational experience could substitute for some of the work experience. My opinions below have taken that into account and reflect

that level of skill in determining the content of the prior art and what it would have suggested to a POSITA.

V. BACKGROUND OF THE TECHNOLOGY

38. At the time of the alleged invention, media sharing between electronic devices was well established and used in an increasing variety of applications to share media data between devices. In the decades before the alleged invention, a wide array of electronic tools were developed to facilitate meetings and share content among individuals, particularly in business and educational settings. As acknowledged by the '951 patent, there has been “an explosion” of such tools by the time of the alleged invention. (EX-1001, 1:27-38.) By the 2000s, there was already “widespread acceptance of using computers to facilitate group communications.” (EX-1033, ¶0004.)

39. The oldest solutions involved wired connections between electronic devices. As wireless networking techniques became more common, wireless applications to electronic tools became prevalent. Indeed, by the time of the alleged invention in 2011, and acknowledge by the '951 patent, wireless networks were commonplace and widespread from classrooms to boardrooms.

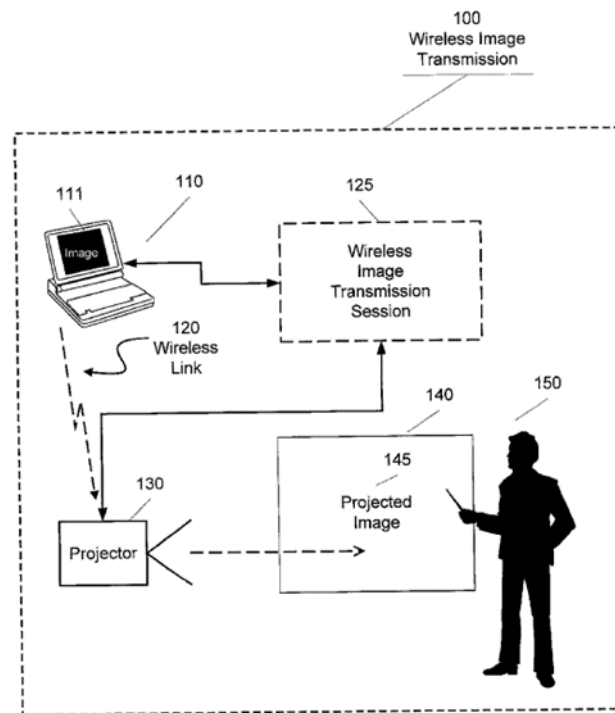
40. Wireless media sharing arose, in part, from the recognition that sharing media content from one device to one or more separate devices (in settings such as a meeting, presentation, *etc.*) using physical cable connections presented certain

physical limitations. For example, one limitation with physical cable connections was the case in which multiple presenters wish to perform presentations while taking turns using respective personal computers (PCs). (EX-1006, ¶0004; *see also* EX-1031¹, ¶0003 (recognizing the limitation of physical cable connections in meetings requires physically reconnecting each electronic device to share media on separate electronic devices)). By designing systems utilizing wireless communication, between a media device (*i.e.*, computer) and a display device (*i.e.*, a second computer, projector, or similar device), “the cable can be prevented from becoming an obstacle.” (*Id.*)

41. Techniques developed for wirelessly sharing media content included, particularly to share the content displayed on a laptop computer or other portable electronic device with another display, for example, in a conference room. Although early on bandwidth of the wireless systems was a potential issue, to address this problem, US Patent Application Publication No. 2002/0196378 (“Slobodin”) proposed a method and apparatus for wireless transmission of “screen scraped”

¹ This is the English Translation (EX-1031) to JP Patent Application Publication No. 2007-208606 (EX-1055). All citations are to the English Translation (EX-1031). EX-1056 is the corresponding certificate of certified translation.

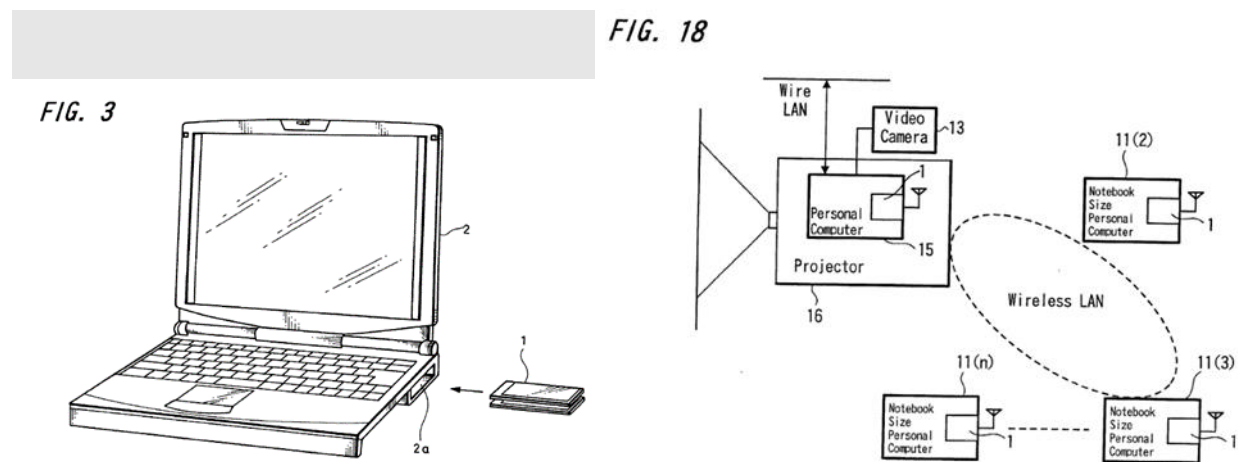
images to a projector to reduced amount of transmission bandwidth. (EX-1033, Title, Abstract, ¶¶12-14.) As shown in FIG. 1 of Slobodin (reproduced below), an image-generating device 110 (*e.g.*, a laptop computer) generates a digital image on a display device 111 that is transmitted over a wireless link 120 to a remote presentation projector 130 for projection 145 by a presenter 150. (EX-1033, ¶33.) Screen scraping was used to capture display data that was transmitted to the projector. (EX-1033, ¶¶12-14.) The '951 patent borrows this same screen scraping technique from Slobodin. (See EX-1001, 11:49-55.)



(EX-1033, FIG. 1.)

42. As wireless networking technology progressed, focus shifted to making the tools more user-friendly and pluralistic. For example, efforts focused on making

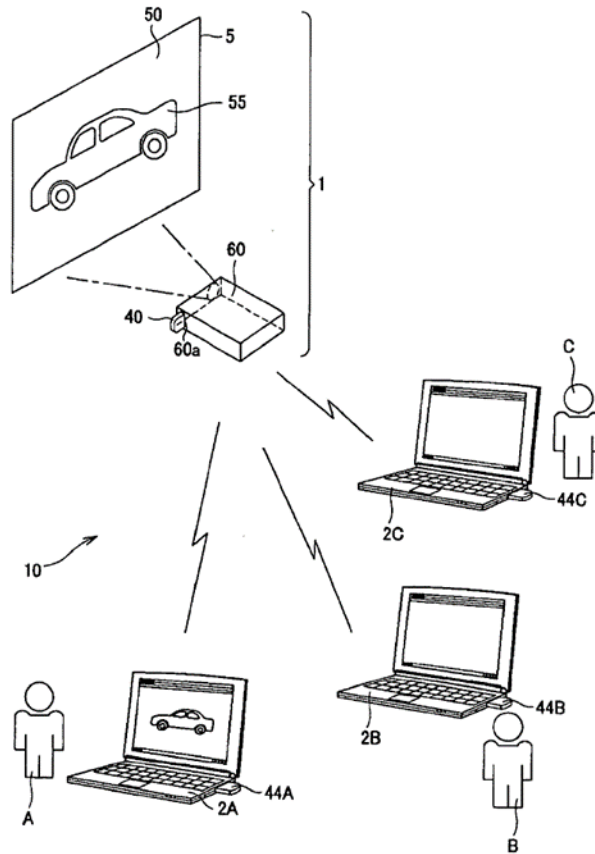
it easier for multiple users to establish network connections to implement wireless communication for image sharing. (See, e.g., EX-1034, ¶¶1-8.) For example, U.S. Patent Application Publication No. 2002/0174254 (“Kita”) (EX-1034) describes a system in which network interface cards were preconfigured to connect to a wireless LAN, such that multiple computers 11 could be wirelessly connected to a projector 16 by merely inserting one of these interface cards 11 without participants needing to configure a network connection. (See, e.g., EX-1034, ¶¶14-17 and FIGS. 3 and 18, reproduced below.)



(EX-1034, FIGS. 3 and 18.)

43. During the 2000s, wireless technology shifted from wireless LAN cards, as described by Kita, to the increasingly more ubiquitous Universal Bus Standard (USB) standard. A range of plug-and-play USB-type devices emerged for sharing both image and audio. For example, U.S. Patent Application Publication No. 2005/0210390 (“Ono”) proposed the use of USB-type “communication

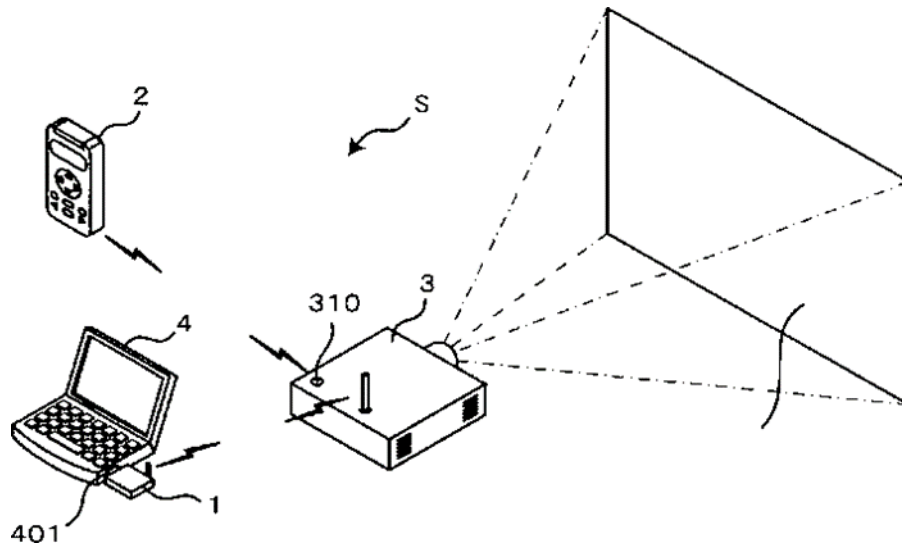
modules” to wirelessly connected an image projector with multiple “information terminal apparatuses,” depicted below as laptop personal computers. (EX-1005, ¶¶36-39.) The communications modules plug into a USB port of the information terminal apparatuses and wirelessly transmit images via a wireless network from the laptop display to a corresponding wireless connection module coupled to the image projector. (EX-1005, ¶¶36-39, 54.) I discuss Ono in greater detail below in Ground 1.



(EX-1005, FIG. 1.)

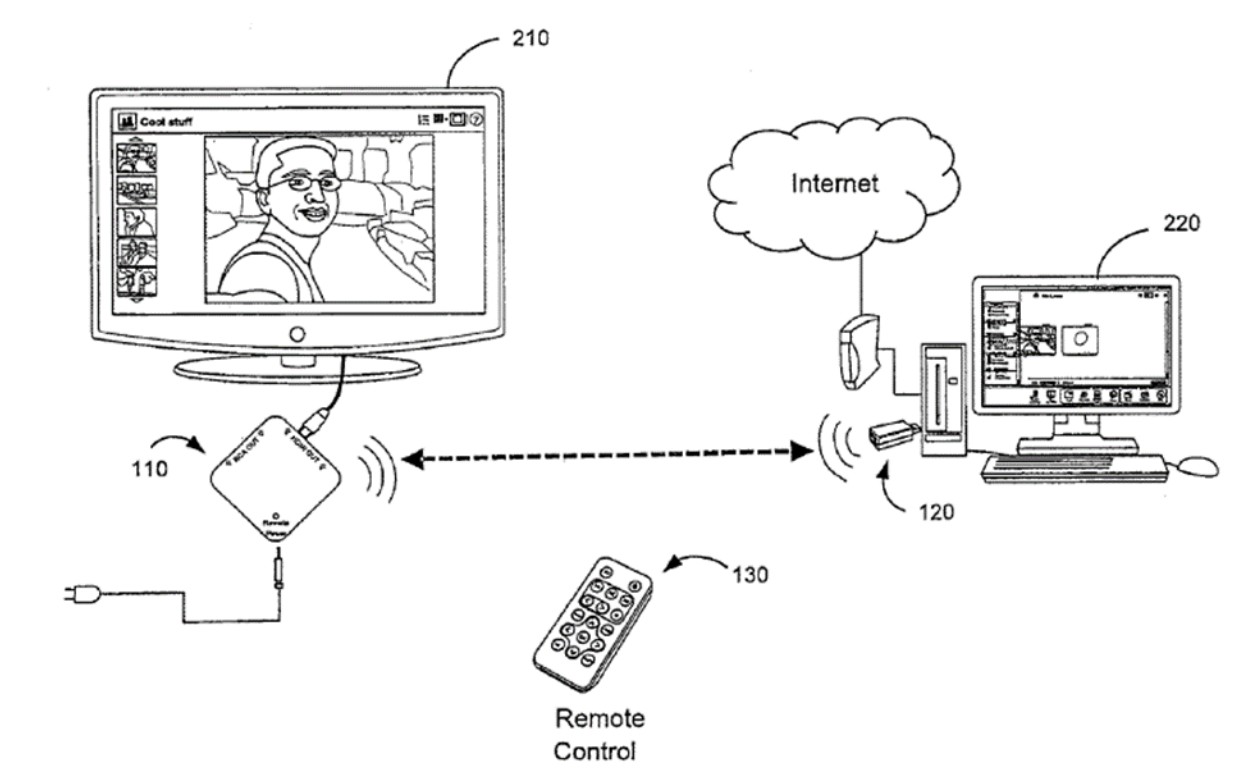
44. Around the same timeframe, Japanese Patent Application Publication No. 2008-165007 (“Uchida”) (EX-1009²) described a similar image projection system. Uchida describes a personal computer device 4 wirelessly connected to an image projection device 3 (*e.g.*, a projector) via a wireless device 1. (*See, e.g.*, EX-1009, ¶39 and FIG. 1, reproduced below.) The wireless device 1 is described as a USB dongle. (EX-1009, ¶39.) The wireless device 1 is connected to the computer 4 and transmitted image data from the computer 4 to the image projection device 3 for display. Wireless setting information is automatically provided without requiring a user to enter this information—thereby making it more convenient for the user to make use of the tool. (EX-1009, ¶¶41-44.) I discuss Uchida in greater detail below in Ground 2.

² This is the English Translation (EX-1009) to JP Patent Application Publication No. 2008-165007 (EX-1010). All citations are to the English Translation (EX-1009). EX-1011 is the corresponding certificate of certified translation.



(EX-1009, FIG. 1.)

45. Near the end of the 2000s, the availability of greater wireless bandwidth led to greater amounts of media content being streamed wirelessly to different devices. For example, U.S. Patent Application Publication No. 2010/0295994 (“Kaplan”) (EX-1027) describes a communications system in which a computer 220 is wirelessly connected to a display device 210 via a USB transmitter 120. (*See, e.g.*, EX-1027, ¶¶16-18 and FIG. 2, reproduced below.) The transmitter is pre-paired with a receiver 110 connected to the display device 210, such that a user does not need to configure the wireless connection.



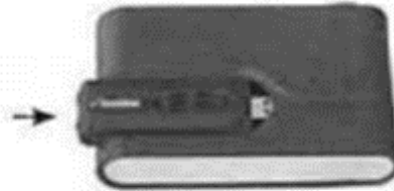
(EX-1027, FIG. 1.)

46. Around the same time, several commercial products were available that employed similar USB dongles for wireless communication between a personal computer and a projector or other display. One example was sold by Imation from at least during 2008 (EX-1050 (Imation), p. 8.) The Imation system included a USB transmitter dongle that plugged into a personal computer and allowed communication with a base unit that was connected to a projector or monitor. (See image below reproduced from EX-1050 (Imation), p. 2.) Imation's system adaptable for use at a conference or meeting with multiple wireless adapters able to communicate with the same projector/monitor (EX-1050(Imation), p. 6 "Associate a New Dongle to the WPL Base Unit".)

1. Projector Receiver
(base unit)



2. USB Transmitter Dongle
(nested on top of base unit)

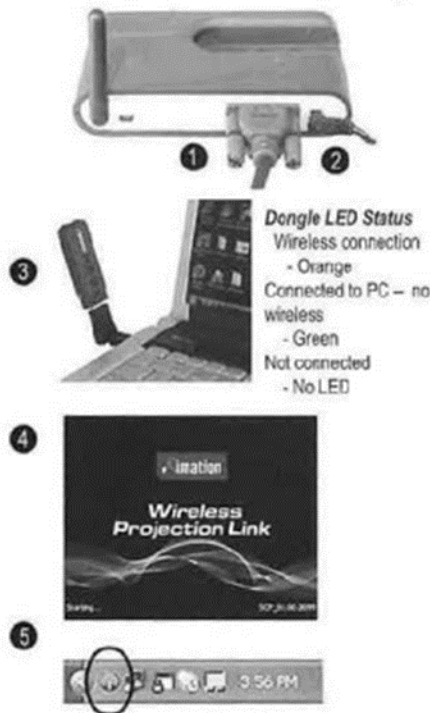


(EX-1050, p. 6.)

47. The Imation system had a simple startup that only required attaching the base unit to the projector/display and to power and inserting the USB transmitter dongle into the personal computer. After only about 20 seconds, a start screen appeared that allowed transferring an image from the computer to be displayed on the projector/monitor. (See image reproduced below from EX-1050 (Imation), p. 2 “Simple Start UP (PC)”.) Since no other installation steps were indicated, pre-installed generic drivers and generic communication protocols of the computer’s operating system most likely allowed setup of the USB transmitter dongle and communication between the PC and dongle. Although an optional special driver was available, this driver was not necessary for operation (EX-1050(Imation), “Installing DisplayLink™ Driver (PC)”.)

Simple Start Up (PC)

1. Insert VGA cable from projector or monitor into VGA port.
2. Connect the WPL base unit to AC adaptor and apply power.
3. Insert PC dongle into USB 2.0 port on host laptop – it is recommended to use the included angle swivel adaptor for better connectivity.
4. In about 20 seconds, start screen will appear on host laptop.
5. When WPL is established, an icon will appear in Windows system tray on lower right of screen.



(EX-1050, p. 2.)

48. Another wireless adapter system was sold under the EZAir brand from around 2010 (EX-1051 (EZAir), p. 1.) According to promotional materials for the EZAir, “[t]he products operate via a Plug&Play USB dongle that plugs into a USB port available in any PC/Laptop and an adapter that connects to the target device (such as flat TV, speaker system or PC peripherals).” (EX-1051 (EZAir), p. 2.) The adapter was also marketed for use in small business and education where multiple participants commonly need to interact with the same projector/display (EX-1051 (EZAir), p 2.) An image from the EZAir marketing material (EX-1051 (EZAir)) illustrates the Plug&Play USB dongle transmitting image and audio data wirelessly

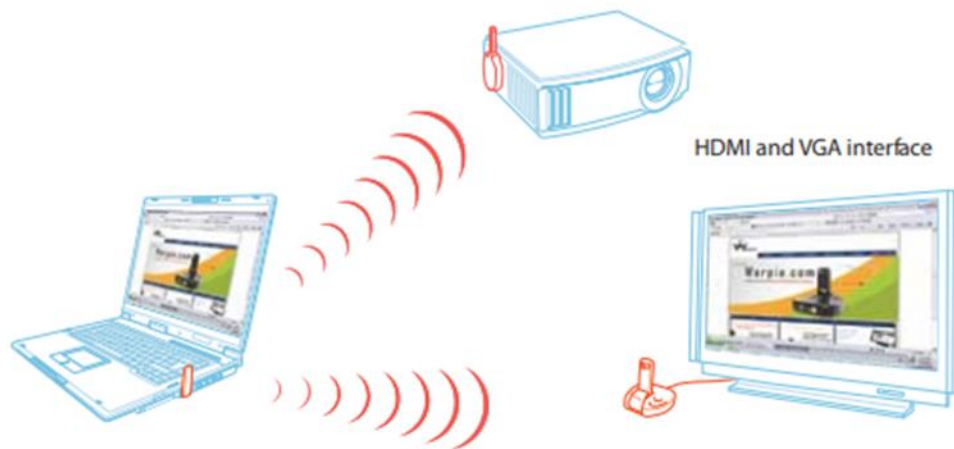
to the adapter connected to a television. The image of an undersea scene from the laptop connected to the dongle is reproduced on the television.



(EX-1051, p. 1.)

49. Wireless adapters with a similar form factor were also sold under the Warpia (EX-1052 (Warpia) and Q-Waves (EX-1053 (Q-Waves)) brands. According to marketing materials from 2009, the Warpia system allowed wireless connectivity from a notebook or PC to displays, such as projectors, TVs, and monitors (EX-1052 (Warpia), p. 1, “Key Features,” “Overview”.) The Warpia system included pre-associated (*i.e.*, pre-paired) adapters that provided audio and video communication to the display (EX-1052 (Warpia), p. 1, “Key Features”.) The system was easy and quick to set up. (EX-1052 (Warpia), p. 1, “Key Features”.) An image from the Warpia marketing material (EX-1052 (Warpia)) is shown below, illustrating image transfer from a PC Adapter connected to a laptop computer to A/V Adapters connected to a projector and a television. The PC Adapter was able to connect to a

USB port, which were common to all notebooks & PCs at the time, and the A/V Adapter connected to an HDMI port or VGA port of a display device. (EX-1052 (Warpia), p.1 “Overview”.)



(EX-1052, p. 1.)

50. IOGEAR sold another wireless media communication kit from at least 2008 (EX-1054 (IOGEAR), p.44 (copyright date).) The kit included a wireless USB host adapter that plugged into a computer from which media was transmitted wirelessly to a wireless VGA adapter connected to a projector or other display. (See images below reproduced from EX-1054 (IOGEAR), pp.13,16.)



(EX-1054, pp.13 (left – wireless host adapter), 16 (right – wireless VGA adapter).)

51. The IOGEAR product anticipated that the host computer operating system would have included pre-installed USB drivers that allowed the USB host adapter to be set up automatically. For instance, IOGEAR indicated that one can “[p]lug the Wireless USB Host Adapter to your computer via option 1 or 2. Windows will detect the device and complete the driver installation process automatically.” (EX-1054 (IOGEAR), p. 13.) The wireless USB host adapter and wireless VGA adapter were pre-associated (or pre-paired) to improve ease of use, such that no network configuration needs to be entered by a user. (EX-1054 (IOGEAR), p. 40.) The IOGEAR kit was also adaptable for use by multiple participants in a meeting. For example, additional wireless USB host adapters could be paired with the same wireless VGA adapter (EX-1054, p. 28.) A “HOST” button on the wireless VGA adapter could then be used to switch between which wireless USB host adapter was

transferring data to the VGA adapter for display. (See EX-1054 (IOGEAR), p. 28, “Wireless USB Host Adapter Selection” reproduced below.)



(EX-1054, p. 28.)

52. It is apparent from the example prior art patent and product literature discussed above that content sharing techniques were well-established by the time of the invention. I have discussed several examples of techniques to transfer image data from a computer to a display routed through a wireless USB dongle or similar set of devices, so that data from the computer display can be presented on another display. The USB technology of these various products utilized standardized USB drivers and communication protocols available to allow a plug-and-play experience. (See, e.g., EX-1050 (Imation), p. 2 “Simple Start Up (PC)”.)

VI. OVERVIEW OF THE '951 PATENT

A. Prior Art Techniques Acknowledged by the '951 Patent

53. The '951 patent is directed to electronic tools for meetings, including methods or devices for use in displaying media content. (EX-1001, 1:17-21; *see also id.*, 5:5-31, 14:66-18:55.) In this vein, the '951 patent recognizes a recent “explosion of communication electronic communication tools” allowing ad hoc communication, such as “synchronous and asynchronous conferencing, online chat, Instant Messaging, audio conferencing, videoconferencing, data conferencing, application sharing, remote desktop sharing, electronic meeting systems, collaborative management (coordination) tools, project management systems, knowledge management systems, and social software systems.” (EX-1001, 1:27-38.) The '951 patent contends that “despite the plethora of electronic aids to meetings, fundamental problems in handling meetings have not been solved.” (EX-1001, 2:22-24.)

54. The '951 patent acknowledges the known desirability for tools allowing greater participation in a meeting and tools addressing that need, such as the audience response system described in US 2010/0087139 (EX-1020 (“Glass”)). (EX-1001, 2:27-45.) The approach taken by Glass uses a USB dongle to effectively turn an electronic device into an audience participation device. (EX-1020, abstract.) As illustrated below, an embodiment of the Glass system includes linkable response

units 12b coupled by a connector (e.g., a USB plug) to a port in electronic devices 24 (e.g., a laptops). (See, e.g., EX-1020, ¶¶0018, 0030.) Linkable response unit 12b wirelessly transfers information via a wireless transceiver 30 to a base station 14, which in turn may be displayed on a screen. (See, e.g., EX-1020, ¶¶0013, 0020.) Linkable response unit 12b may also include a keypad/buttons 46 to trigger transmission of the information. (EX-1020, ¶0033.) A program 42 stored on response unit 12b enables communication between the various devices. (EX-1020, ¶¶0021, 24-26.)

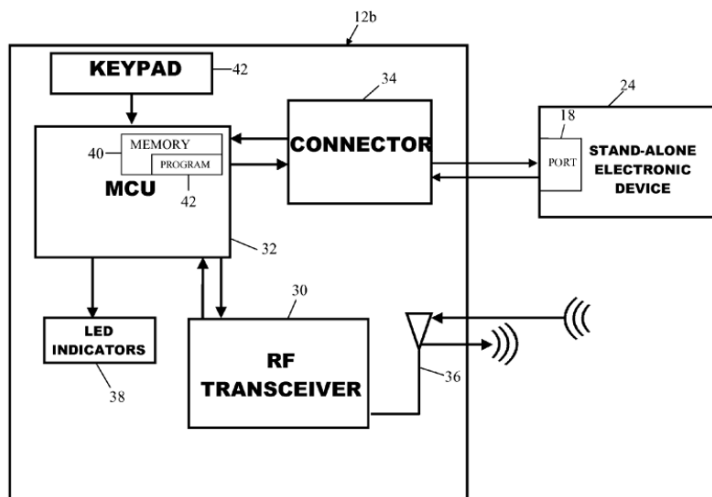


FIG. 2

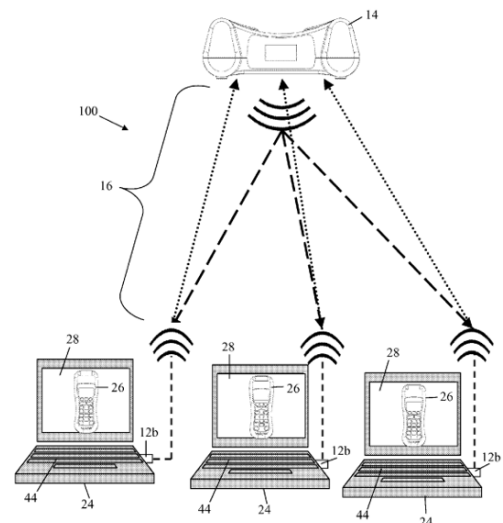


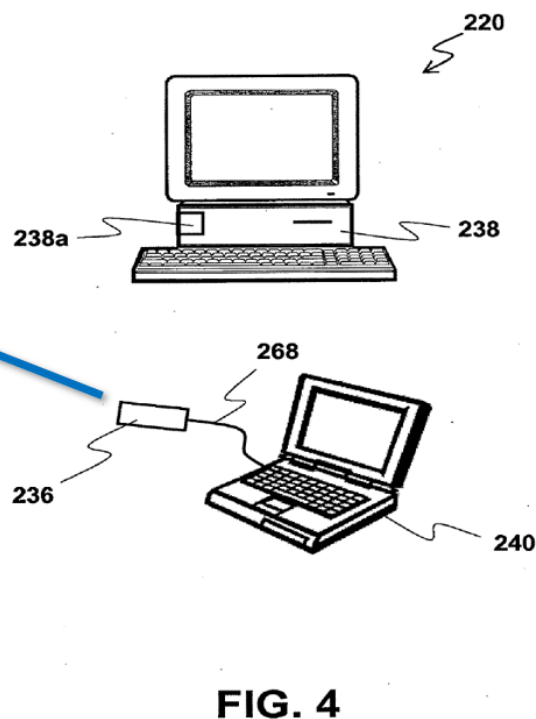
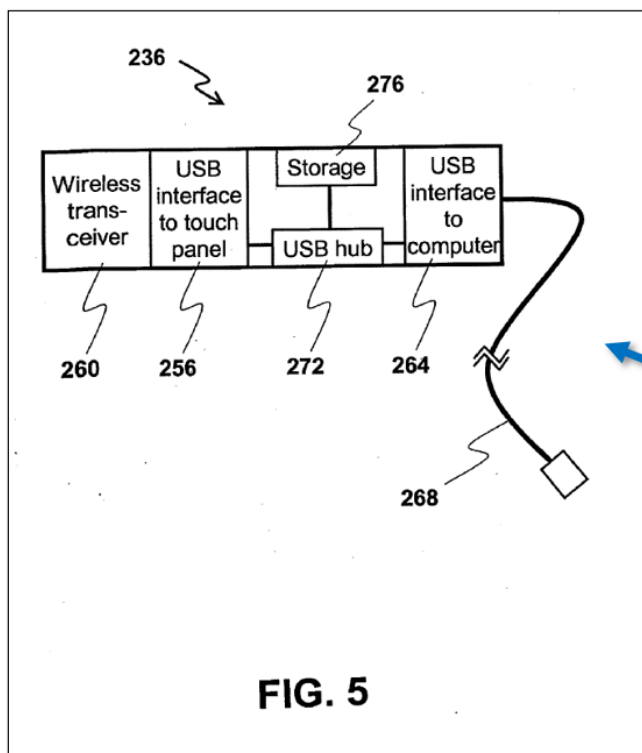
FIG. 3

(EX-1020, FIGS. 2, 3.)

55. The '951 patent also recognizes three common techniques for transferring content of a computer to a projector. (EX-1001, 3:13-25.) According to the '951 patent, “[t]he most common ways are to use a cable that connects the display adapter of the graphics card to the video input of the projector [method 1] or

to use a software that captures the display contents and sends it over a wired or wireless network to a remote base unit connected to the projector [method 2].” (*Id.*, 3:13-19.) A known alternative to these techniques was “to use a special device connected to the display adapter of the graphics card that captures, encodes and streams the display content over a wired or wireless network [method 3].” (*Id.*, 3:22-25.)

56. As examples of prior art techniques, the ’951 patent identifies US Patent Application Publication No. 2009/0198839 (EX-1021 (“Banerjee”)) and US Patent Application Publication No. 2011/0115689 (EX-1022 (“Sugiyama”). (*Id.*, 4:8-15.) The ’951 patent admits that these publications describe the use of the “well-known USB interface of the computer for extracting the display content of the computer” and transferring to a projector. (*Id.*) Indeed, Banerjee describes, according to one embodiment illustrated in Figures 4 and 5 (below), a plug-and-play device 236 that physically connects to remote computer 240 and communicates with the master computer 238 over a wireless communications link. (EX-1021, ¶0039.) In this embodiment, “plug-and-play device 236 captures and compresses screen display data generated at the remote computer 240 and allows screen sharing between the remote computer 240 and the master computer 238 by automatically launching software stored on the plug-and-play device 236.” (*Id.*)



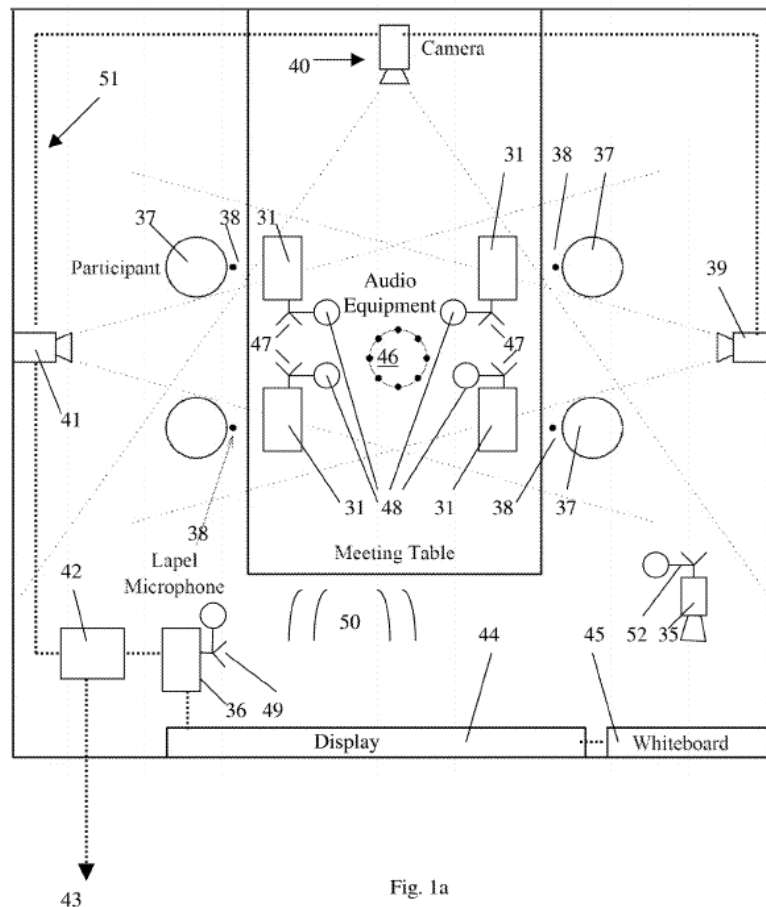
(EX-1021, FIGS. 4, 5.)³

57. Although Figure 4 of Banerjee shows a master computer 238 communicating with a single remote computer 240, Banerjee contemplates that communication can be made to multiple remote computers via respective plug-and-play devices. (EX-1021, ¶0052.) Additionally, the master computer 238 may act as a node for transfer of the screen display data to a projection device 244 for display. (EX-1021, ¶0054.)

³ All color elements are annotations added to the figures unless otherwise noted.

B. The Purported Invention

58. The '951 patent purports to improve problems associated with previous meeting technologies such as the “high demands of technical expertise” and “barriers to the use of complicated technology” and the “lack of, or restriction of participation by members of the meeting.” (EX-1001, 4:44-56.) Yet, the claims of '951 patent are simply directed to electronic meeting tools that wirelessly communicate media content between an electronic device and a display via a peripheral device and base node—much like the acknowledged prior art discussed in the previous subsection. (*See id.*, 4:8-19, 27:42-30:46; Section VI.A.)



(EX-1001, FIG. 1a)

59. Although described as an alternative method, the '951 patent fails to explain any concrete distinction between these prior art methods. Instead, the '951 patent asserts that the prior art method “usually requires special drivers and even special hardware.” (*Id.*, 4:15-16.) However, this statement seems to acknowledge that at least some prior art USB-based content sharing methods did not require special drivers and hardware. The content sharing described in the '951 patent employs, for example, plug-and-play devices such as a wireless USB dongle. (*Id.* at 15:36-39, 17:55-18:3.)

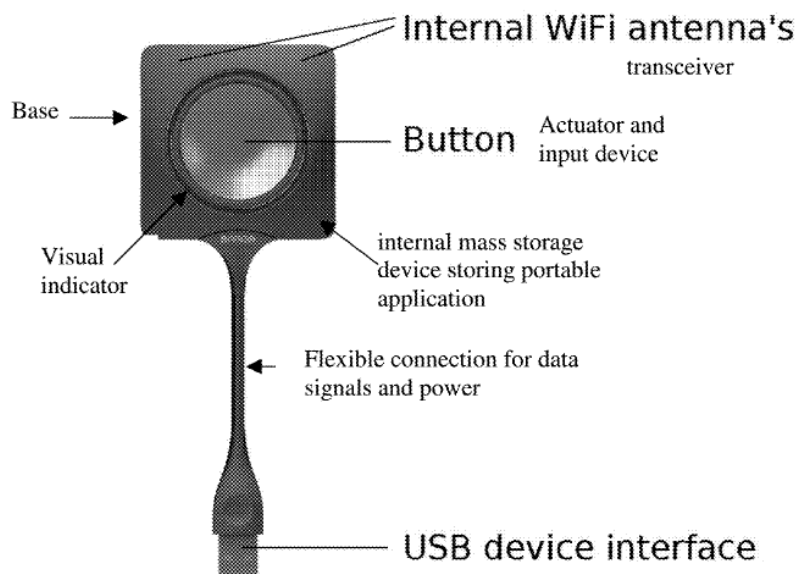


Fig. 10

(EX-1001, FIG. 10.)

60. But the challenged claims are not meaningfully different from these prior art wireless networking techniques, including, for instance, the methods and systems described in Ono, Uchida, Grimshaw, and others discussed here.

C. Summary of the Prosecution History

61. I have reviewed the prosecution history and noted that the examiner did not reject the ultimately allowed claims based on prior art nor provide any reasons for allowance. (EX-1004, 53, 398-403, 416-422.) The examiner initially rejected the claims for including terms that lacked proper antecedent basis and for obvious-type double patenting. (EX-1004, 416-423.) Claim 61 was also rejected as anticipated by US 2010/0066806. (*Id.*) After minor amendment, submission of a terminal disclaimer, and cancellation of claim 61, the remaining claims were allowed. (EX-1004, 398-403.) The examiner did not provide any reasons for allowance as to how the allowed claims allegedly distinguished over the prior art. So it is not clear why the claims were thought to distinguish over the prior art. As I discuss above and in further detail below, all features recited in the challenged claims were already known.

VII. CLAIM CONSTRUCTION

62. I understand that claim terms are typically given their ordinary and customary meanings, as would have been understood by a POSITA at the time of

the alleged invention, which, as I explained above, I have been asked to assume is around September 14, 2011.

63. In considering the meaning of the claims, however, I understand that one must consider the language of the claims, the specification, and the prosecution history of record. In general, I have been asked to consider the claim terms under their plain and ordinary meanings and thus considered the claims, specification, and prosecution history for the '951 patent in doing so in support of my opinions concerning the '951 patent and the prior art discussed herein.

64. However, I have also been asked to consider the following descriptions for the terms below. Where the terms appear in the claims, I have read the terms in light of their corresponding descriptions from the '951 patent in so far it was necessary to apply them to the prior art. I have accounted for these descriptions in forming my opinions whether or not I have specifically addressed those descriptions in further detail in the following sections.

A. “arbitrary media content” (claims 1, 9, 16)

65. The '951 patent states:

[t]he term “arbitrary media content” refers to the fact that a user may generate, create or select any media content that is appropriate to display. This differs from client voting on, or selecting of media content that is displayed by another in a meeting or presentation. This term refers to client oriented, distributed rights and privileges for the display

of content rather than a central presenter providing content which is presented to the members of the meeting. (EX-1001, 11:43-50.)

B. “coupled” (claims 1, 9, 16, 21)

66. The ’951 patent states that:

the term “coupled”, also used in the description or claims, should not be interpreted as being restricted to direct connections only. Thus, the scope of the expression “a device A coupled to a device B” should not be limited to devices or systems wherein an output of device A is directly connected to an input of device B. It means that there exists a path between an output of A and an input of B which may be a path including other devices or means. (EX-1001, 13:17-24.)

C. “wireless communications network” (claims 1, 9, 16, 21)

67. The ’951 patent states that:

[a] “wireless communication network” can be any network that does not use cable links between nodes, e.g. uses RF, optical or InfraRed for communication purposes, such as IrDA, diffuse infra-red, WLAN, WiMax, WiFi, WiFi Direct, Bluetooth or any other wireless communication network known to the person skilled in the art. (EX-1001, 11:60-65.)

D. “plug and play” (claim 4)

68. The ’951 patent states that:

“[p]lug and play” is a term used to describe the characteristic of a computer bus, or device specification, which facilitates the discovery

of a hardware component in a system, without the need for physical device configuration, or user intervention in resolving resource conflicts. Plug and play devices can be added to a bus of a computing system (while running or when shut down), and the newly added device and possibly the rest of the computing system is automatically configured to make the newly added device work, both from hardware and from software perspective. Plug and play interfaces include for example (not an exhaustive list): Firewire (IEEE-1394), PCI, Mini PCI, PCI Express, Mini PCI Express, PCMCIA, PC Card, Universal Serial Bus (USB), SDIO cards. (EX-1001, 9:46-59.)

E. “pre-installed generic driver” (claim 5)

69. The '951 patent states that:

[t]he term “pre-installed generic driver” is intended to mean a driver which is installed on a processing device such as a computer as a standard driver, e.g. is installed with the installation of the operating system. Such a driver is standard for the operating system and can drive a standard class of peripheral devices coupled to or connected to the processing device. The installation of a specific driver for such a peripheral device is not required. Such a generic driver can be a human interface driver (HID) or a mass storage device driver, which has predetermined software components configured for driving mass storage, a CD-ROM, a keyboard etc. or combinations of these. Such devices can be readable and writable computer peripheral memory devices such as USB memory sticks, flash memories, external hard drives, or more. (EX-1001, 12:10-24.)

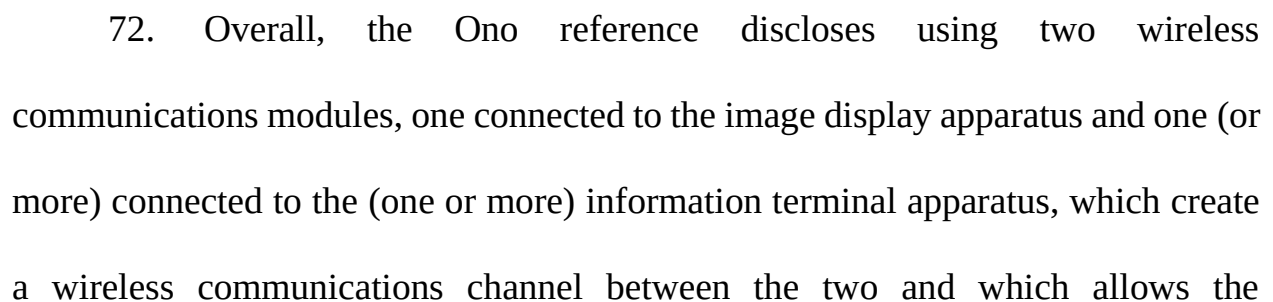
VIII. OVERVIEW OF THE PRIOR ART

A. Ono (EX-1005)

70. Like the '951 patent, Ono is directed to an “image display apparatus that receives images transferred from a plurality of information terminal apparatuses connected to a wireless [] network, and displays them on a display section.” (EX-1005, ¶0002.) For example, Ono’s disclosed invention “makes up a wireless network by connecting an image display apparatus 1 and three information terminal apparatuses 2A, 2B, and 2C to a wireless communications channel.” (*Id.*, ¶0036.) The image display apparatus uses a screen and a projection apparatus to display shared media onto the screen. (*Id.*, ¶0038.) To wirelessly receive the media, Ono discloses that a “communications module 40, such as a wireless connection module,” is inserted into a “slot 60a” on the projection apparatus, which creates, and subsequently uses, a wireless connection to a wireless communications channel to receive selected media from the multiple information terminal apparatuses 2A, 2B and 2C. (*Id.*)

71. Ono further discloses, connected through the wireless communication channel, information terminal apparatuses which may be personal computers. (*Id.*, ¶0039.) The information terminal apparatuses also use “[c]ommunications modules 44A, 44B and 44C, such as wireless connection modules,” which attach to the body of the information terminal apparatuses via a slot and, in concert with the

(EX-1005, FIG. 1.)



information terminal apparatus to transfer or share media content from the information terminal apparatus to the image display apparatus. Thereafter, the image display apparatus may display the media content on the screen to one or more persons.

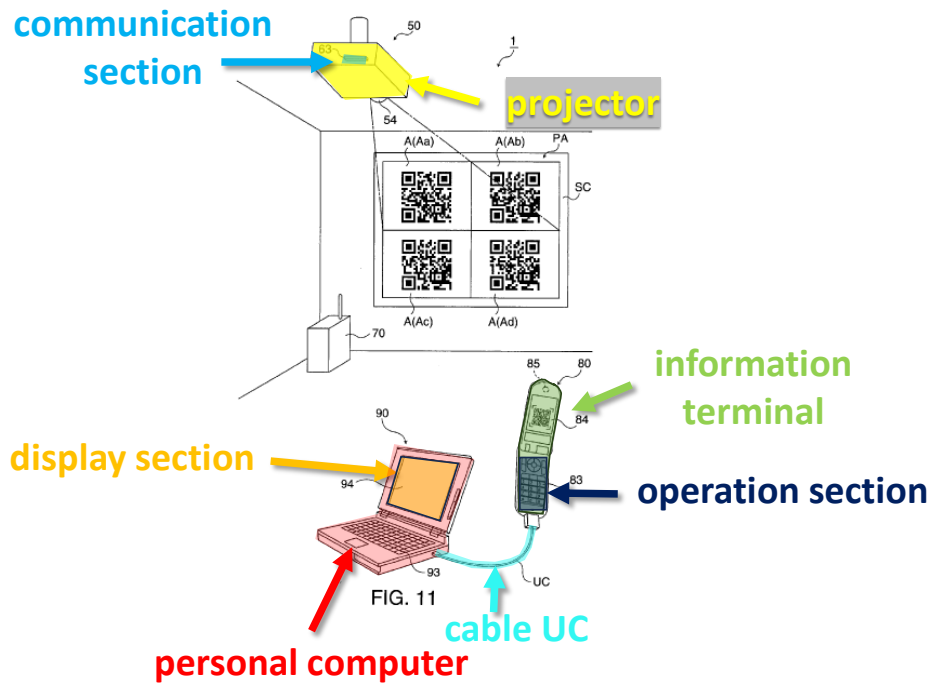
B. Ichieda (EX-1006)

73. Similar to the '951 patent, Ichieda is directed to an “image display device for displaying an image based on an image signal input from a plurality of image supply devices via a network.” (EX-1006, Abstract.) The invention disclosed within “has an advantage of providing an image display device, an image display system, and a network connection method allowing the user to easily perform the procedure for establishing the network connection to the image display device such as a projector.” (*Id.*, ¶0008.)

74. In particular, Embodiment 1 of Ichieda describes a projector capable of connecting to an “information terminal” by connecting both devices, and communicating, via a network such as a wireless local area network (LAN). (EX-1006, ¶0043.) An interface section 59 of the projector provides a card slot and a USB port, and the communication section 63 of the projector is connected to the card slot. (*Id.*, ¶0059.) Communication section 63 can be arranged to use a wireless LAN adaptor attached to the USB port to receive the image signals from the information terminal. (*Id.*, ¶0060.)

75. The information terminal may likewise be equipped with a card slot or USB port for connecting a wireless LAN card or adaptor for transmission and reception of image signals. (*Id.*, ¶0072.) The information terminal (here, a cell phone) transmits an image signal to the projector through a wireless connection via LAN (local area network) between the information terminal and the projector, which then generates and displays the image on the display. (*Id.*, ¶¶0044, 0083, FIG. 5.)

76. In Embodiment 3, Ichieda discloses that the image display system with the projector has “the same configuration as in the first embodiment.” (*Id.*, ¶0129.) Further, the information terminal likewise has the “same configuration as in the first embodiment except that the information terminal 80 has an interface (I/F) section 88 capable of wired data communication with an external device,” which may be connected via USB connector capable of data communication. (*Id.*, ¶¶0131, 0137.) In this particular embodiment, the external device is a laptop computer 90 which has a control section 91, a hard disk drive 92, an operation section 93, and an interface section 95 with a communication section 96. (*Id.*, ¶0132.) In operation, this embodiment uses the information terminal to establish a wireless connection between the laptop PC and the projector while the laptop PC’s “control section 91 retrieves the image data to be projected by the projector 50 from the hard disk drive 92, and transmits the image data from the communication section 96 to the projector 50 as the image signal.” (*Id.*, ¶¶0135, 0150.)



(EX-1006, FIG. 11.)

C. Corbett (EX-1007)

77. Corbett discloses a peripheral device, such as a USB flash drive, that uses a physical USB connection to connect to a host computing system. (EX-1007, ¶0017.) Corbett recognized an issue that a user may wish to transfer data to a separate, external device while the USB flash drive is connected to the host computing system. (*Id.*, ¶0018.) To solve that issue, Corbett discloses that the USB flash drive can include a transmitter within the flash drive itself “for transmitting data from the computer readable medium 112 to an external device 150.” (*Id.*) The transmitter further has the ability to transmit the data to the external device wirelessly. (*Id.*, ¶0020.)

78. Further, Corbett discloses that the user may manually initiate the transmission of the data to the external device. To initiate the transfer, Corbett discloses a “USB flash drive 100 may include a transmission initiation selector 134, such as a button, selector wheel, and the like” which, upon activation, causes the transmitter to transmit all or a portion of the data to the external device. (*Id.*, ¶0023.)

D. Grimshaw (EX-1008)

79. Similar to the '951 patent, Grimshaw discloses a communication system that provides audio, video, telephony, presentation and/or other conferencing functions. (EX-1008, ¶0002; EX-1012, 1:4-7.) The system disclosed by Grimshaw uses a “control module 12, user modules 14-20, [and] a display module 22” (*Id.*, ¶0012; EX-1012, 1:23-2:6) to connect users in a meeting, for example, and share media content between each.

80. The control module acts as an information hub for the system and may include “any combination of electronic processing devices, memory devices, input/output (I/O) devices, and other hardware components.” (*Id.*, ¶0013; EX-1012, 2:7-22.) Users of the communication system can “connect a device (e.g., a laptop computer, netbook, PDA, mobile phone, etc.) to one or more of the user modules 14-20.” (*Id.*, ¶0023; EX-1012, 7:18-29.) Once connected, “data [can be] exchanged between the laptop computer and the use [sic] module via the data port. This and other information may then be exchanged between the user module and the

communication system 10.” (*Id.*, ¶0026; EX-1012, 8:10-28.) Grimshaw also discloses that the connection between the laptop computer and the user module and/or between the user module and the communication system may be a wireless port. (*Id.*)

81. The display module connected to the communication system “acts as a visual and/or audio output for communication system 10,” and may be a television, projector and/or monitor, but it may be any other suitable display device instead.” (*Id.*, ¶0030; EX-1012, 9:29-10:2.) The display module, for example, allows users with a laptop computer to “plug[] into a data port on the user module 14, [so that] the video and/or data signals from that computer are sent to display module 22 so that all meeting attendees can see what is on that particular computer.” (*Id.*, ¶0027; EX-1012, 8:29-9:8.) Further, Grimshaw discloses the ability of the users to manually “take control of the display module 22 by respectively engaging buttons 344 . . . which causes switch controller 318 to pass the data signals from the selected user module on to the display module.” (*Id.*, ¶0019; EX-1012, 5:8-24.) The buttons may be “contact or contactless buttons, switches, a touch screen, or any actuator that provides a change of state.” (*Id.*, ¶0028; EX-1012, 9:9-20.)

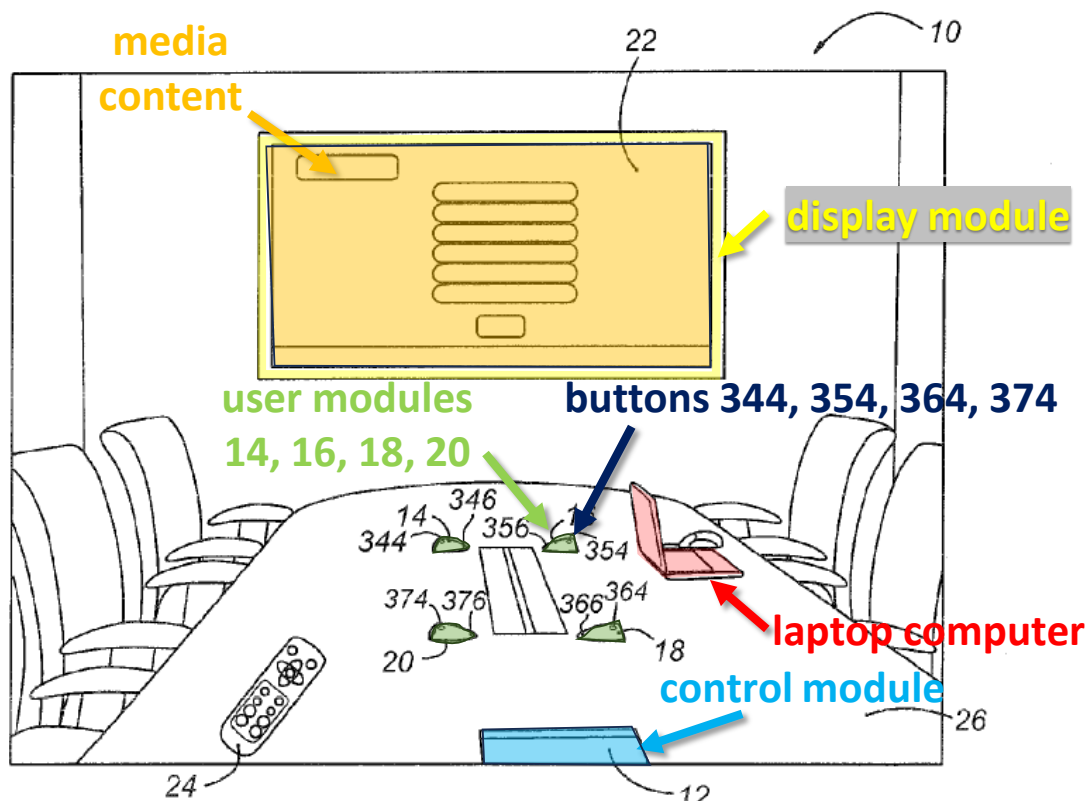


Figure 1

(EX-1008, FIG. 1; see EX-1012, FIGS. 1 & 3.)

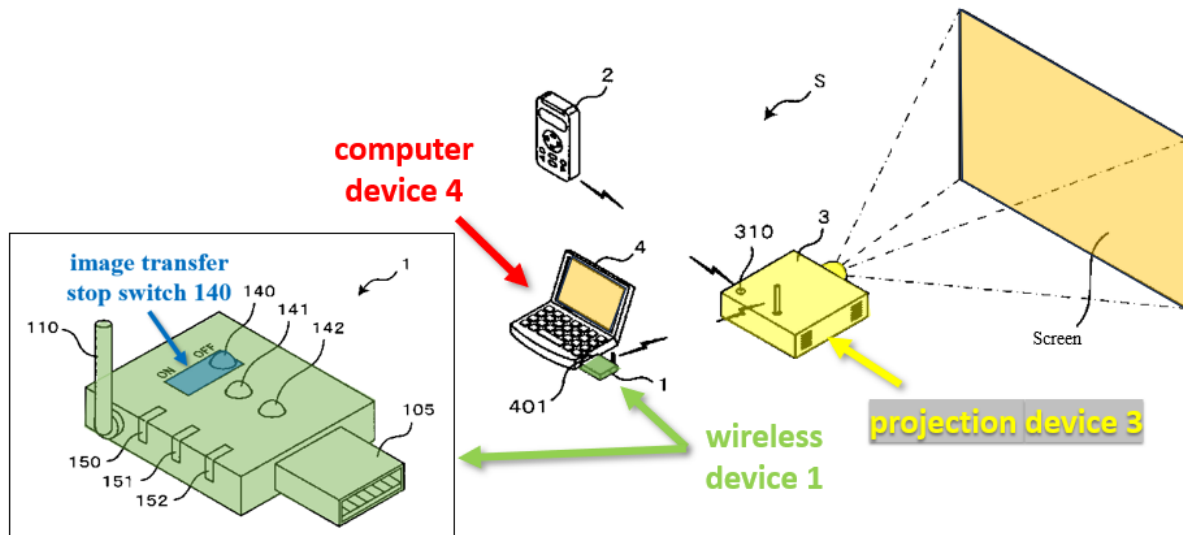
E. Uchida (EX-1009)

82. Uchida discloses a method for connecting, by wireless communication, an image projection device to a computer device using a wireless USB device. (EX-1009, Abstract.) Uchida recognizes that cable connections to connect image projection devices to computer devices could be complicated in a conference setting and that benefits could be achieved through, instead, using a wireless connection to transmit data. (*Id.*, ¶0004.) Further, Uchida recognizes issues with wireless

connection systems which required configuration of the wireless communication settings on the image display device and the computer device, which “require[d] a certain level of knowledge and is often not easy.” (*Id.*, ¶0006.)

83. The system disclosed in Uchida uses a “wireless device 1 [of] a USB dongle” which connects to the “computer device 4” through a “USB connector 105.” (*Id.*, ¶0039.) Through the wireless device connected to the computing device, the wireless device is able to “transmit image data to the image projection device 3 via the wireless device 1” by “wireless communication from the computer device 4” where, thereafter, the image projection device “projects an image corresponding to the image data on the screen” of the computer device. (*Id.*)

84. Uchida utilizes a storage unit in the wireless device 1 to store wireless setting information which, upon connection to the computer device, automatically configures the wireless settings to connect the computer device to the image projection device for wireless communication between the two devices. (*Id.*, ¶¶0042, 0048.) The computer device may then “transmit[] image data to the image projection device 3 via the wireless communication unit by executing an image transfer application.” (*Id.*, ¶0048.)



(EX-1009, FIG. 1.)

IX. THE PRIOR ART DISCLOSES AND/OR SUGGESTS THE RECITED FEATURES OF CLAIMS 1-11 and 13-21 OF THE '951 PATENT

A. Ground I – Ono and Corbett Disclose and/or Suggest the Features of Claims 1-4, 6-11 and 13-21

1. Rationales to Modify the Image Display System of Ono

85. As to the additional features of limitation 1(f) (*i.e.*, reciting that the “peripheral device” comprises the “input device” and the “the input device being a physical actuator coupled to the at least one peripheral device”), a POSITA would have been motivated to include such features in implementing an image display system like that of Ono as discussed in detail below.

a. A Simple Combination of Known Elements, each Performing the Same Function It Had Been Known to Perform

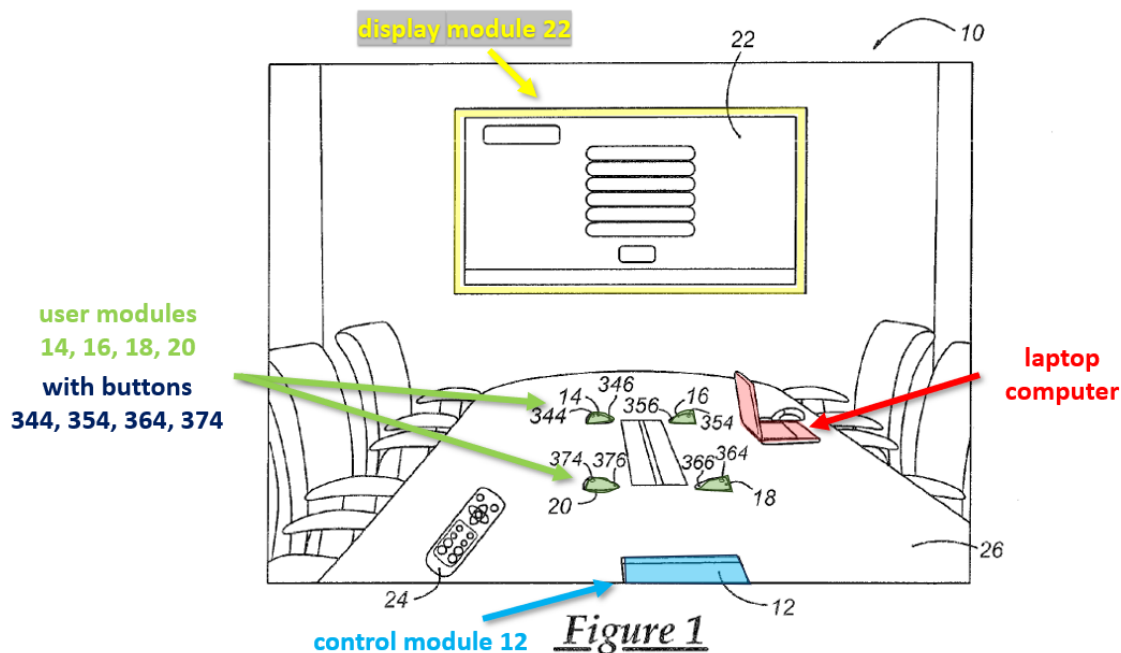
86. First, Ono teaches each element separately and a POSITA would have recognized that the elements (*i.e.*, “peripheral device” and “input device”) could have been combined according to known methods in a predictable manner with no change to their respective functions. In the case of Ono’s system and as discussed above, a POSITA would have considered Ono’s wireless communications module 44 to be a “peripheral device,” as claimed. And as discussed above, a POSITA would have considered Ono’s remote controller 69 to be an “input device” as claimed (including keys as “physical actuators”). Physically combining Ono’s wireless communications module 44 and remote controller 69 would have been well within the ordinary skill of a POSITA. At a minimum, such a combination could have been achieved with many simple temporary or permanent mating mechanisms joining each device (screw/screw holes, adhesives, snap connectors, *etc.*). However, more seamless integration of physical actuators into a wireless peripheral device was also well-known in the art. (*See, e.g.*, EX-1007, ¶¶0022-0023, 0026, 0046, FIG. 1; EX-1008, ¶¶0004, 0019-0020, 0027-0028, FIGS. 1-3; EX-1009, ¶¶0070-0072, FIG. 3; EX-1012, 5:8-6:17, 8:29-9:20, FIGS. 1-3.) These suitable straightforward techniques would have allowed Ono’s wireless communications module 44 to continue to function as a wireless communications module (*i.e.*, wireless transmitting and receiving image information and other data) and the remote

controller to continue to remotely control the projector 60 (*e.g.*, to select a PC for image display). Such a modification to Ono's wireless communications module 44 could have been made regardless of the presence of another remote controller. (*See, e.g.*, EX-1009.) In words, such a modification could have been as an adjunct to the remote controller 69 (providing local control to the user) or as an alternative (where each communication module 44A, 44B, 44C is provided with similar input devices). Thus, the combination simply arranges known elements described by Ono with each performing the same function it had been known to perform.

87. Moreover, independent of this reasoning and yet further supporting it, there was a known desirability to provide a user of an electronic meeting tool with a local input device that would allow control over sharing the content of the user's computer screen to a shared display. Grimshaw and Uchida both illustrate this desirability in the art and thus provide a specific design incentive to make the proposed modification to Ono's wireless communications module. Specifically, each describe an input device located on a peripheral device, where the input device is a physical actuator that triggers transmission of the user's computer screen content to a shared display, and thus provide a function similar to Ono's remote controller.

88. Grimshaw (which is also discussed in Section VIII.D and XI.B) is directed to "a communication system that may provide a combination of audio, video, telephony, presentation and/or other conferencing functions." (*See, e.g.*, EX-

1008, abstract, ¶0002; EX-1012, 1:4-7.) In particular, Grimshaw describes user modules that couple to laptop computers to allow transmission to a common display and thus is analogous to the arrangement in Ono. Again, a POSITA would have also recognized that Grimshaw and was from the same field of endeavor as the '951 patent and address similar problems of allowing user control over transmission of information. (See EX-1001, 1:17-22.) Thus, a POSITA looking to implement an image display system like that of Ono would have taken into account teachings like that of Grimshaw.



(Ex-1008, FIG. 1; EX-1012, FIGS. 1-3.)

89. Grimshaw discloses user modules 14, 16, 18, 20 can connect to each user's laptop around the table, for example, and—with the push of a button—allow the user to take control of a common display module 22 and display the contents of

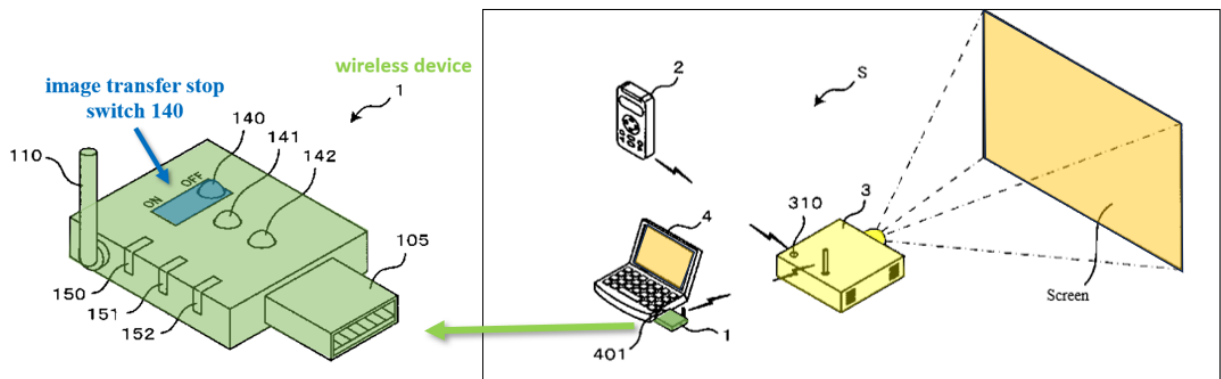
the user's laptop screen. (*See, e.g.*, EX-1008, ¶¶0004, 0019 (EX-1012, 5:8-24), 0020 (EX-1012, 5:25-6:17).) For instance, Grimshaw states:

consider the case where separate laptop computers are connected to user modules 14-20 and are vying for control of the display module 22; that is, each of the connected computers is outputting data signals through data connections 342, 352, 362, 372 for presentation on display module 22. The display module 22 may not simultaneously display the information from all four computers/user modules. Thus, the users of modules 14, 16, 18, 20 can take control of the display module 22 by respectively engaging buttons 344, 354, 364, 374, which causes switch controller 318 to pass the data signals from the selected user module on to the display module....

To explain, a user may engage or push a button 344, 354, 364, 374 on their user module in order to take control of display module 22 (e.g., display module 22 could show whatever is currently being displayed on the screen of the laptop computer connected to the selected user module). (EX-1008, ¶¶0019-0020 (EX-1012, 5:8-6:17).)

Thus, Grimshaw recognizes the desire for attendees at a meeting to have individual control over sharing the content of their individual laptop computer and present it on the shared display for the group and the means to do so, namely, by pushing a button on their individual user module. (EX-1008, ¶¶0019-0020; EX-1012, 5:8-6:17; *see also* EX-1008, ¶¶0027-0028, FIGS. 1-3; EX-1012, 8:29-9:20, FIGS. 1-3.)

90. Uchida (discussed in Section VIII.E. and XI.B also illustrates state-of-the-art knowledge. Similar to Ono, Uchida discloses a wireless USB dongle 1 for sending content (image data) from a personal computer to a projector 3 for display of the content. (EX-1009, ¶¶0010-0013, 0039-0040.) Included on the USB dongle is a slidable switch (“image transfer stop switch 140”), which allows the user to temporarily stop transmission of the image data when the user no longer wishes to have their content displayed by positioning the slider in the “ON” image stop position. (EX-1009, ¶¶0070-0072.) A POSITA would have also appreciated that if the slide switch is moved to the opposite “OFF” position, transmission may resume. Otherwise there would be no need for a slidable switch to toggle between two different states.



(EX-1009, FIGS. 1, 3) Thus, Uchida similarly exemplifies state-of-the-art knowledge of the desire for a user to control when the dongle transmits content from the display of their computer for projection onto a screen and an input device

(ON/OFF slide switch) located on a dongle to allow the user to halt or permit that transmission.

91. Notably, Uchida's wireless device includes image transfer stop switch 140, even though the system includes a remote control device 2 that remotely controls the operation of the image projection device, including stopping image projection. (EX-1008, ¶0115.) While remote controllers like that taught by Ono and Uchida have certain known advantages, they also have limitations which would have been known to a POSITA. For example, it would have been known from common experience that remote controller would have to be shared among the users of the different computers—generally limiting use to a single user at a time. Further, remote controllers typically required battery power—and thus may not work if the batteries need replacement. USB peripheral devices, on the other hand, are often powered by the computer into which they are connected. Also, remote controllers themselves may have to be replaced if misplaced. For at least these reasons, electronic devices were often designed with alternative input devices allowing user input. For example, televisions and set-top boxes—despite typically including remote controllers—conventionally included physical actuators on the devices themselves to perform the same functions and act as a back-up if the remote were lost or otherwise inconvenient. All of this would have been appreciated by a POSITA working with electronic meeting tools as a practical aspect of implementing

such tools. Thus, state-of-the-art knowledge included the known desire for a user to control when the content/information from their individual computer is shared on a shared display to others and the known implementation of an input device to provide that control conveniently located on the transmitter.

b. A Routine Matter of Design Choice

92. Independent of the reasoning above and yet further supporting it, the combination of an input device and peripheral device as claimed, was a routine matter of design choice. To begin, a POSITA would have understood that user input devices, such as physical actuators, to allow a user action to easily trigger an electronic process, were ubiquitous in electronic devices at the time of the alleged invention. (See my discussions above in Section V; *see also* EX-1007, ¶¶0022-0023 (describing different options for user input devices).) Buttons and other physical actuators were conventionally located any place reasonably convenient to the user. (See *id.*) Indeed, Ono's operation section 69a with various buttons and keys exemplifies one design choice—placing the operation section on a remote controller. However, a POSITA would have also considered a finite number of appropriate locations to implement such operational control as a substitute or adjunct to a remote controller.

93. Corbett in particular illustrates such a input device to trigger transfer of data on a similar wireless peripheral device and would have motivated a POSITA to

consider implementing similar arrangements. A POSITA would have understood and appreciated that adding an image triggering functionality to a wireless communication module would have simply provided an additional or alternate way in which a user may select the desired information terminal apparatus for display, conveniently located at the user's information terminal apparatus. In other words, adding an input device as claimed would have constituted the addition of a known input device (*e.g.*, like that of Ono's remote control) to a known apparatus (*e.g.*, like that of Ono's a wireless communications module) according to its known function (*e.g.*, like that described by Ono to switch a common display to display the contents of the user's information terminal apparatus). Such a modification would have been well predictable and within the ordinary skill of a POSITA. (See, *e.g.*, EX-1007, ¶¶0022-0023, 0026, 0046; EX-1008, ¶¶0004, 0019, 0020, 0027-0028; EX-1012, 5:8-24, 5:25-6:17, 8:29-9:20.)

94. Beyond the predictability and applicability of a button to trigger transmission of information, a POSITA would have appreciated the desirability of such a feature to make it more user-friendly and convenient. For example, a person of ordinary skill in the art would have understood that Corbett is directed to peripheral devices, particularly USB peripheral devices. (EX-1007, ¶0002.) For example, Corbett teaches that "[t]o transfer stored data to an external device not compatible with the USB protocol, the USB flash drive may include a transmitter capable of

transmitting data from the USB flash drive directly to an external device.” (EX-1007, ¶0006.) Corbett discloses that “[t]he transmitter may transmit a modulated data signal and/or may transmit the data wirelessly, e.g., without a direct physical connection between the USB flash drive and the external device 150. (EX-1007, ¶0020.) This has the advantage of being able to transfer data directly from the USB flash drive to the external device, “without any intervention by the host computer system 102 connected to the USB connector 106 of the flash drive 100.” (*Id.*)

95. Thus, much like Ono’s communication module 44 (a USB-type peripheral device), Corbett’s peripheral device may also wirelessly transmit information to an external device (*i.e.*, a device that is not coupled to the peripheral device). (EX-1007, ¶¶0018-0023.) Such a POSITA would have also recognized that Corbett and Ono were from the same field of endeavor as the ’951 patent and address similar problems of allowing user control over transmission of information. (*See* EX-1001, 1:17-22 (“The present invention relates to electronic tools for meetings including methods or devices for providing connection to a communications network, to networks or methods of operating the network, methods or devices for use in displaying media content as well as software for performing any of these methods.”).) Thus, a POSITA looking to implement an image display system like that of Ono would have taken into account teachings like that of Corbett.

96. Notably, Corbett discloses a USB flash drive 100 including a transmitter 122 (*i.e.*, a “peripheral device”) for wireless transmission which includes a transmission initiation button 134 (*i.e.*, an “input device”) for allowing a user to trigger transfer of stored information to an external device 150. (*See, e.g.*, EX-1007, ¶¶0006, 0018-0020, 0022, 0023 (“In another example, transfer of data through the transmitter 122 may be initiated through selection of one or more selectors 130 of the USB flash drive. For example, as shown in FIG. 1, the USB flash drive 100 may include a transmission initiation selector 134. Such as a button, selector wheel, and the like.”), 0026, 0028, 0046, FIG. 1.) Thus, Corbett describes one design option in implementing transmission initiation input device like that of Ono and claimed by the ’951 patent.

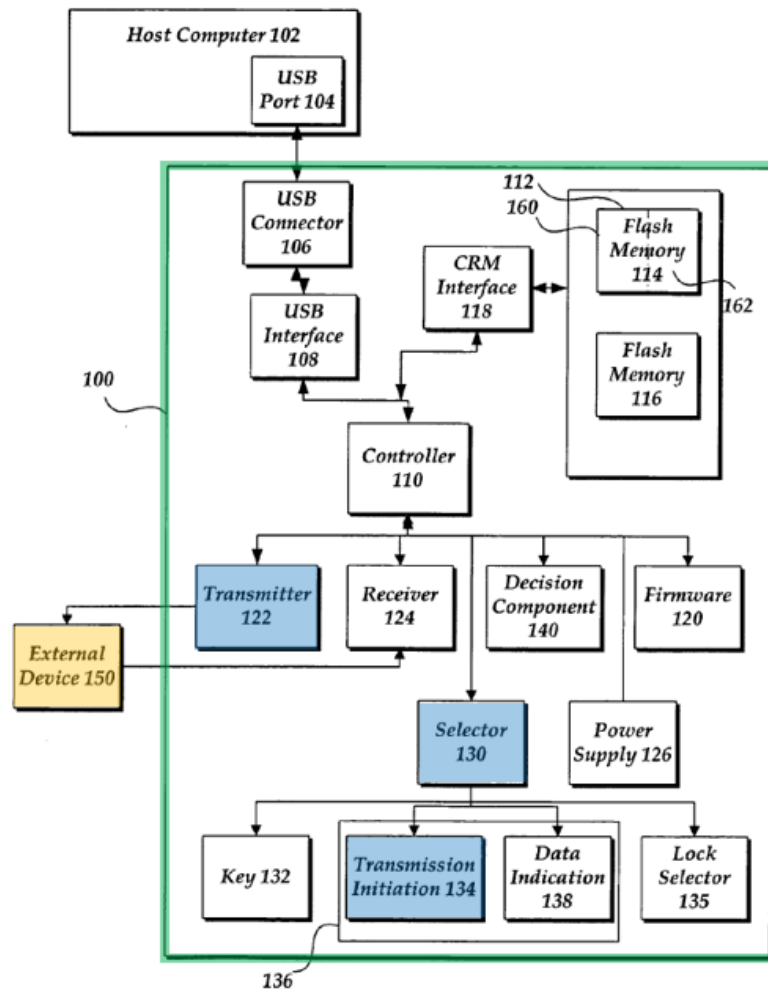


Fig. 1

(Ex-1007, FIG. 1.)

97. A POSITA would have understood that Corbett thus describes an implementation of a user input device as an alternative to Ono's remote control. A POSITA would have considered incorporating an input device/physical actuator (like the transmission initiation button 134 of Corbett) and would have been motivated to make such an enhancement to Ono's wireless communication module 44 to provide the added functionality like Corbett's transmission initiation input device (which allows a user to initiate transfer of data) in lieu of or in addition to

Ono's remote control. As illustrated by Corbett, this enhancement would have provided the user with a simple means of triggering transmission to an external device to which the wireless device is connected.

98. Further, as discussed in regard to claim 11, Corbett also describes an alternative placement for a user input, namely though a user interface on the host computer. (EX-1007, ¶0022 (“Transfer of data from the nonvolatile memory to the external device 150 through the transmitter 122 may be initiated by any appropriate method or device. In one example, the user may provide a transmission initiation indication through the host computer system to initiate transmission of data to an external device. More particularly, a client driver (not shown) of the host computer system 102 may provide a dialog, menu, displayed button, or other appropriate user interface or selector which allows a user to initiate transfer of data. The host computer system may communicate the transmission initiation indication to the USB flash drive through the USB connection. In response to the transmission initiation indication, the transmitter may transmit data to the external device.”).) Thus, Corbett describes two potential locations for the placement of a user input device—the host computer and the peripheral device itself. A POSITA would have appreciated that both of these locations would have been reasonably accessible to a user of the host computer.

99. Glass similarly recognizes two potential location for a input device to trigger transmission through a wireless peripheral device. Glass describes a linkable response unit 12b that plugs into a host device and wirelessly transfers information via a wireless transceiver 30 to a base station 14, which in turn may be displayed on a screen. (See, e.g., EX-1020, ¶¶0013, 0020.) Linkable response unit 12b includes a keypad 46 with buttons to trigger transmission of the information. Glass recognizes that these input device could be provided regardless of whether host computer has other input devices. (EX-1020, ¶0033 (“While the ability of linkable remote response units 12b to be linked to a host electronic device 24 via connector 34 may obviate the need for a keypad or other input devices on the remote response unit 12b itself, linkable remote response units 12b may nevertheless still include a keypad 46 having a plurality of buttons (or other structures) that enable information to be directly entered into remote response units 12b via the keyboard 46. Such directly entered information may then be transmitted by transceiver 30 to base station 14.”).) Thus, as illustrated by Ono, Corbett, and Glass, there were a finite number of known locations for placement of a user input device to trigger transmission of information from the user’s computer to a display apparatus—the host computer, the wireless peripheral device, and a remote controller. Further, these references illustrate that it would have been well within a POSITA’s knowledge and abilities to incorporate an input device as claimed in any or all of the these locations.

100. In light of the ubiquitous use of physical actuators to act as input devices and specifically the known implementation of a dedicated button to trigger transmission of information (for example, as taught by Corbett, Uchida, Glass, and Grimshaw) a POSITA would have been not only been motivated to modify a wireless communication module like that taught by Ono to include a physical actuator for triggering transmission of the image information, a POSITA would have also had a reasonable expectation of success in making such a modification.

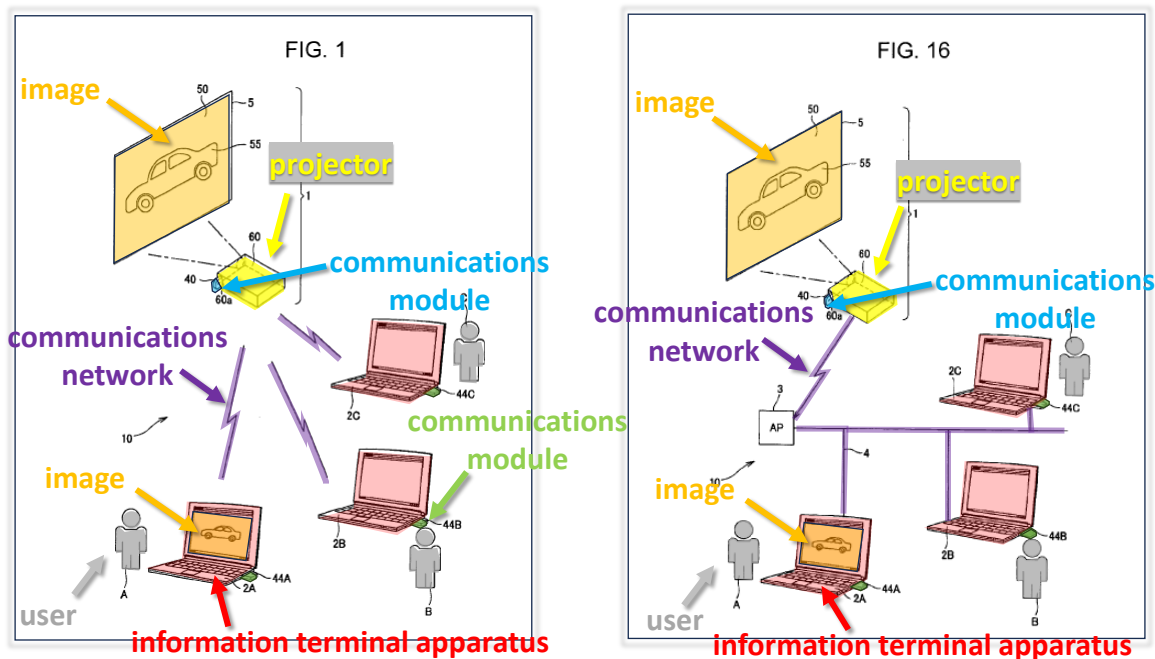
2. Claims 1 and 9

101. The teachings of Ono alone or in combination with Corbett disclose and/or suggest all the limitations of claims 1 and 9. The limitations of claims 1 and 9 are nearly identical except with respect to limitation 1(f) and corresponding limitation 9(f). As noted below, limitation 9(f) does not recite that the input device is included in the peripheral device and does not recite a physical actuator. As illustrated by claim 11, the input device of claim 9, may be displayed on a display of a processing device.

a. Limitation 1(pre)/9(pre): *An electronic meeting tool for communicating user selected arbitrary media content from users at a meeting comprising:*

102. I have been asked to assume the preamble of claim 1 is limiting for the purposes of my analysis. If the preamble is not limiting, it would not change my analysis for the limitations below.

103. To the extent limiting, Ono teaches limitation 1(pre). For instance, Ono discloses that image display system 10 (an “electronic meeting tool”) “makes up a wireless network by connecting an image display apparatus 1 and three information terminal apparatuses 2A, 2B and 2C to a wireless communications channel.” (EX-1005, ¶0036, FIG. 1 (reproduced below); *see also* Figures 16 and 17 (illustrating a similar embodiment but with an access point AP 3).)



(EX-1005, FIG. 1, 16)

104. A POSITA would have understood that Ono’s system could be used as an electronic meeting tool for communicating “user selected arbitrary media content” from users at a meeting because the system is capable of switching among a plurality of information terminal apparatuses connected to a network and selecting

the desired information terminal apparatus 2A, 2B, 2C (for example, from a presenters (A, B, C) at a meeting), and displaying the image information from a display section of the desired information terminal apparatus on a screen 5. (EX-1005, ¶0144 (“As described above, through operations using the remote controller 69 and with respect to the projector 60 of the image display apparatus 1, the image display system 10 is capable of switching among a plurality of information terminal apparatuses connected to a network and selecting the desired information terminal apparatus therefrom, and of displaying on a display section image information from the desired information terminal apparatus. In other words, so long as the information terminal apparatuses are connected to the wireless network, images can be switched and displayed on the screen 5 with ease..... Further, since, just through operations from the remote controller 69 of the image display apparatus 1, it is possible to switch the information terminal apparatus whose image is to be projected onto the screen 5, even in cases where, for example, there are a plurality of presenters to present in a given order, it becomes unnecessary for each presenter, in accordance with the order, to perform an output on/off operation at each information terminal apparatus, and therefore, the gap in time until the next presentation is eliminated, and presentations can be conducted speedily.”))

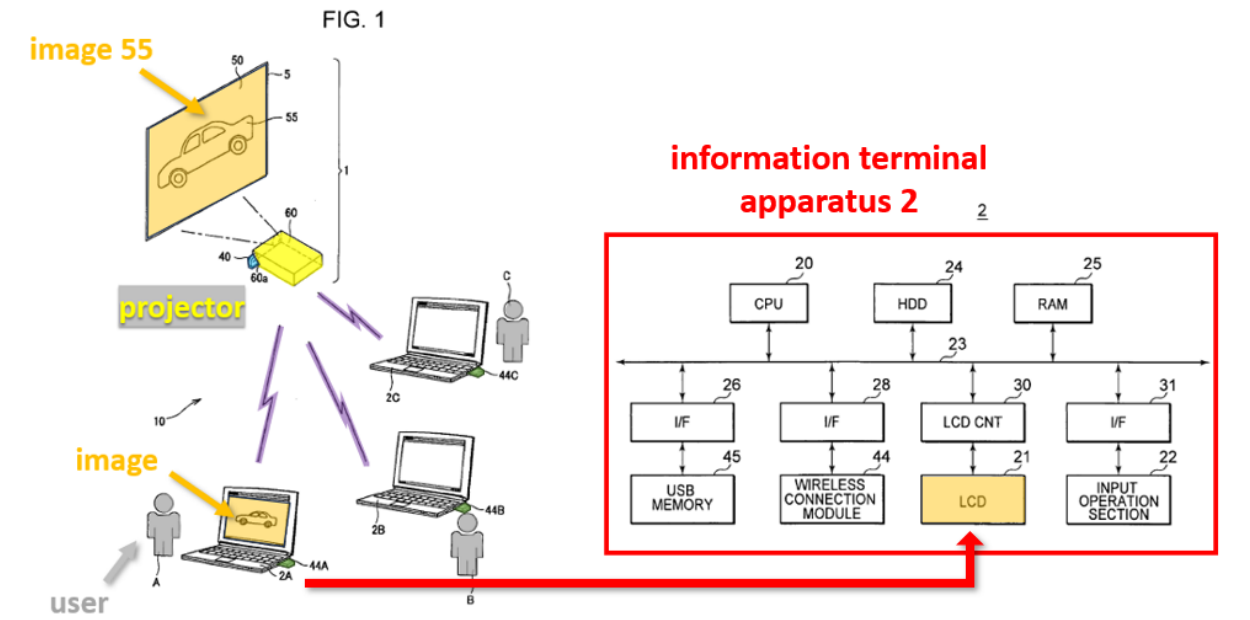
105. As discussed above, I understand that the '951 patent states that “the term ‘arbitrary media content’ refers to “the fact that a user may generate, create or

select any media content that is appropriate to display.” (EX-1001, 11:43-50.) Although the precise phrase in claim 1 is “user selected arbitrary media content,” a POSITA would have similarly understood “user selected” to refer to how a user may interact with their own electronic device, such as a laptop computer, to choose the content is displayed. As discussed further below, Ono’s image display system enables display of an image 55, and, more generally, image information (*e.g.*, “user selected arbitrary media content”) from the display of the user’s information terminal apparatus. In other words, Ono’s system enables a projector to display what is on a user’s computer screen. Ono’s image information is thus consistent with description of “user selected arbitrary media content” provided by the ’951 patent.

106. For example, Ono discloses that when the information terminal apparatus 2A and the projector 60 are connected (step S8), “the CPU 20 of the selected information terminal apparatus 2A transmits the image information signal displayed on the liquid crystal display apparatus 21 to the wireless connection module 40 of the projector 60 from the wireless connection module 44 via the I/F 28.” (EX-1005, ¶0088; *see also* EX-1005, FIGS. 7, 9.) Ono further discloses that “the projector 60 receives the image information transmitted from the information terminal apparatus 2A ... and based thereon, makes image signals based on the above-mentioned image information be output by the image signal output section

65, and projects and displays the image from the information terminal apparatus 2A on the screen 5.” (EX-1005, ¶0089; *see also* EX-1005, FIG. 1.)

107. A POSITA would have understood that Ono’s system “differs from client voting on, or selecting of media content that is displayed by another in a meeting or presentation” (EX-1001, 11:43-50), as distinguished by the ’951 patent. Ono’s system projects an image 55 onto display screen 50 that corresponds to the image displayed on the selected information terminal apparatus. For example, Figure 1 shows a car displayed on information terminal 2A and the same car displayed on display screen 50. (EX-1005, FIG. 1; *see also* EX-1005, ¶¶0073 (“[I]t is assumed that image information to be sent out to the image display apparatus 1 is selected and displayed on the liquid crystal display apparatus LCD 21.”), 0077-0089 (explaining how the information displayed on display 21 of information terminal 2 is transferred to projector 60 for display), FIG. 7 (below).) Thus, whatever image information is selected by the user for display on display of the information terminal 2A will be displayed on the display screen 20 if the information terminal 2A is selected for display.



(EX-1005, FIGS. 1 & 7.)

108. At least in this regard, Ono does not describe, in the words of the '951 patent, “a central presenter providing content which is presented to the members of the meeting” and, instead, provides a system with “client oriented, distributed rights and privileges for the display of content.” (EX-1001, 11:43-50.) Rather, considering Ono’s description, a POSITA would have understood image display system 10 to be an electronic meeting tool capable of communicating user selected arbitrary media content from users at a meeting.

b. Limitation 1(a)/9(a): a base node, the base node being coupled to a first display, the base node being adapted to receive user selected arbitrary media content from at least one peripheral device via a wireless communications network, and to control display of the user selected arbitrary media content on the first display

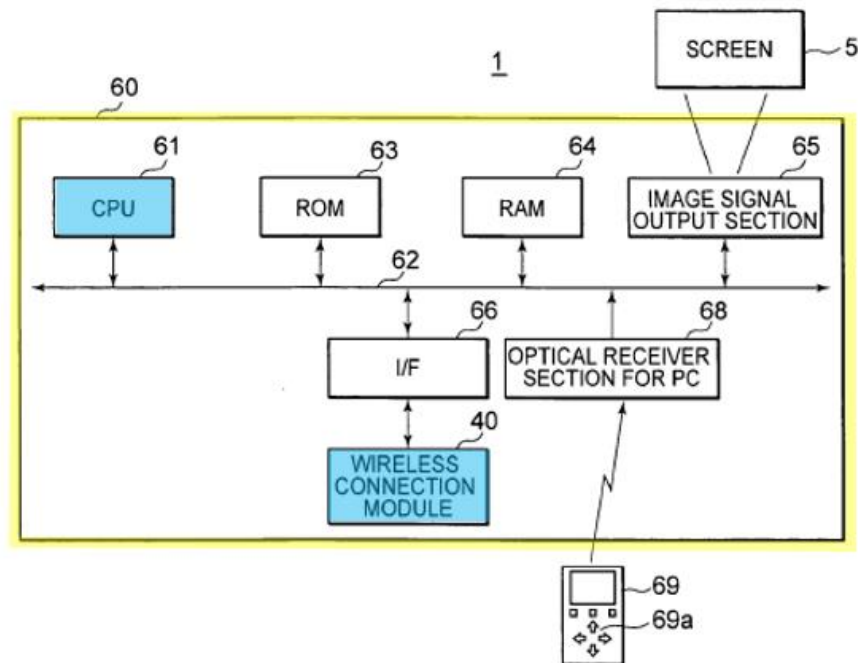
109. Ono discloses this limitation. For example, Ono discloses that image display apparatus 1 includes, among other things, a wireless communications module 40 and control section 61 (also referred to as central processing unit (CPU) 61) (e.g., “a base node”), which is coupled to an image display apparatus (e.g., “a first display”), including an image signal output section 65 and screen 5.⁴ (See, e.g., EX-1005, ¶¶0042 (“FIG. 3 is a block diagram schematically showing a configuration of the image display apparatus 1. The image display apparatus 1 is comprised of the screen 5 and the projector 60, receives, through the communications module 40, such

4 My identification of structure corresponding to the claim elements is exemplary only. Additional or alternative components could be identified. For example, wireless communications module 40 or access point 3 (FIG. 16) or other components of projector 50 might also be included in a “base node,” which are coupled to a “first display.” Similarly, Ono teaches alternatives to the projector and screen as an image display apparatus and hence a “first display.” (See EX-1005, ¶¶0162.)

as a wireless connection module, image information that is sent from the above-mentioned three information terminal apparatuses 2A, 2B and 2C via the network, and displays an image based on the image information on the screen 5.”), 0043 (“The projector 60 is comprised of ... a control section 61 ... and the above-mentioned communications module 40.”), 0044, 0065-0070, 0088-0089 (“The wireless connection module 40 of the projector 60 receives the image information transmitted from the information terminal apparatus 2A. The CPU 61 receives the above-mentioned image information via the I/F 66, and based thereon, makes image signals based on the above-mentioned image information be output by the image signal output section 65, and projects and displays the image from the information terminal apparatus 2A on the screen 5.”), FIGS. 1-3, 6, 7, 9.

110. A POSITA would have understood that Ono’s wireless communications module 40 and control section 61 (also referred to as central processing unit (CPU) 61) would have been considered “a base node”, particularly where the ’951 provides a similar example. For instance, the ’951 patent states that “[t]he base node 36 may also be a processing device or host computer and may be coupled to a second connection unit 49 that provides access to the network 50 thus linking all of the processing devices 31, 36 together.” (EX-1001, 14:24-28.) As illustrated below wireless communications module 40 and control section 61 are “coupled to” an image signal output section 65 and screen 5. This again appears to

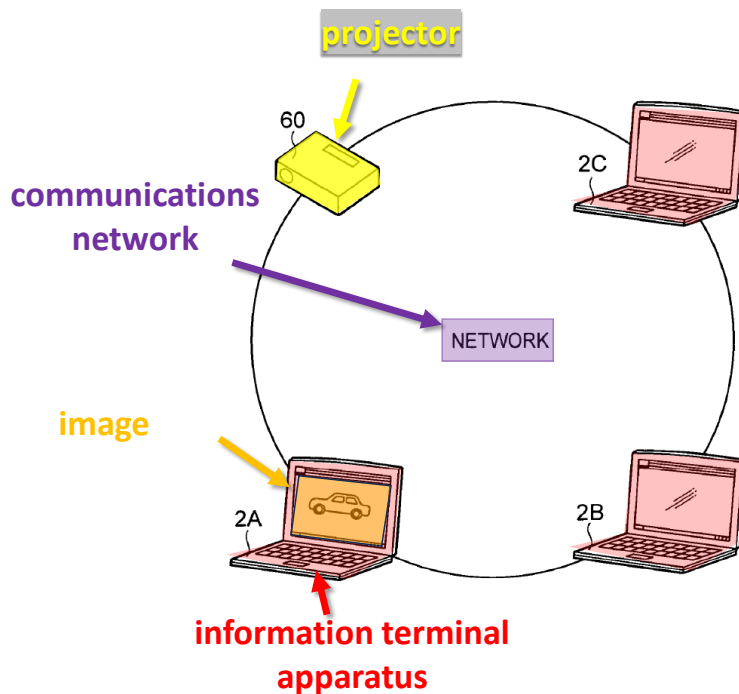
be similar an example of a base node 36 (also referred to as a display node 36) in the '951 patent. (EX-1001, 14:34-39.)



(EX-1005, FIG. 6.)

111. Ono further discloses that wireless communications module 40 receives image information (*i.e.*, user selected arbitrary media content) from communication module 44A (*i.e.*, at least one peripheral device) via network (*i.e.*, a wireless communications network). (EX-1005, ¶¶0011 (“[A]n image display apparatus [] receives a transfer of image information via the network from the above-mentioned one or more information terminal apparatuses and displays on a display section an image based on the above-mentioned image information...”), 0037 (“The wireless communications channel is one that utilizes a transmission path other than a wire cable, such as radio waves and infrared rays.”), 0038 (“[T]he module 40 is used for

receiving image information that is sent from the three information terminal apparatuses 2A, 2B and 2C via the wireless network.”), 0041 (“The information terminal apparatus 2A, for example, encrypts image information that is to be projected and displayed on the screen 5 by the projector 60 of the image display apparatus 1 and transmits it to the communications module 40 of the projector 60 through the communications module 44A. ... The projector 60 of the image display apparatus 1 receives, through the communications module 40, the above-mentioned encrypted image information wirelessly transmitted from the information terminal apparatus 2A via the above-mentioned wireless communications channel, and projects it onto the display screen 50 of the screen 5 as an enlarged image 55 after converting it into decrypted image information.”), 0042, 0052, FIGS. 1-3, 6, 7, 9; *see also* my discussion above regarding user selected arbitrary media content.)



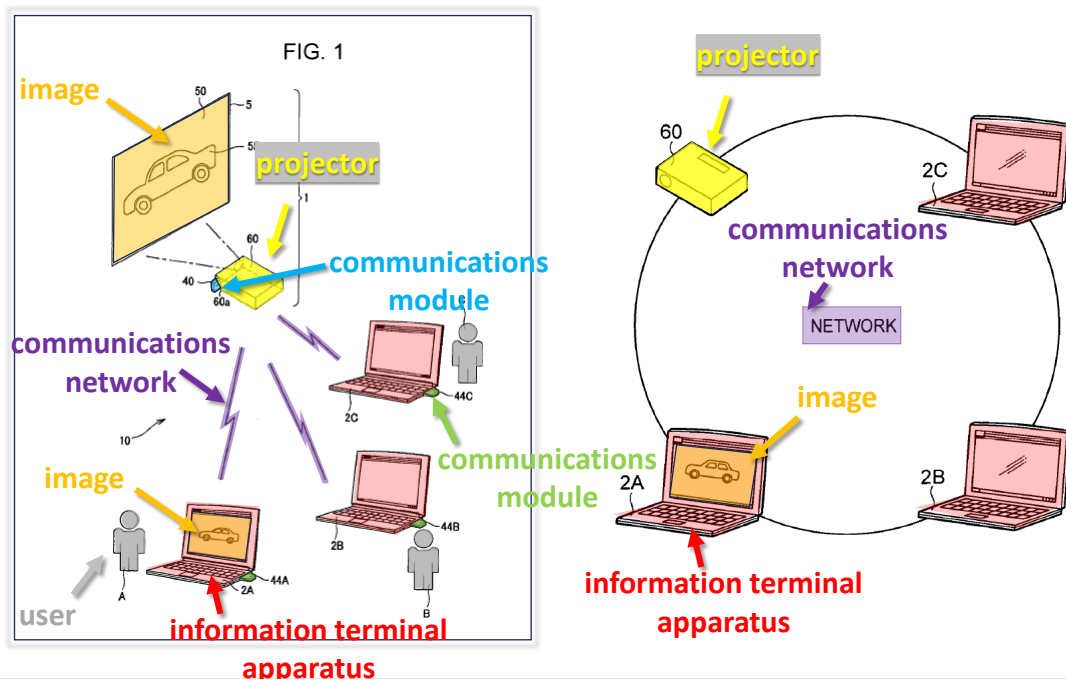
(EX-1005, FIG. 2.)

112. As noted above, the control section 61 controls display of the image information (e.g., user selected arbitrary media content) on the screen 5. (See, e.g., EX-1005, ¶0089 (“The CPU 61 receives the above-mentioned image information via the I/F 66, and based thereon, makes image signals based on the above-mentioned image information be output by the image signal output section 65, and projects and displays the image from the information terminal apparatus 2A on the screen 5.”).)

c. Limitation 1(b)/9(b): *the at least one peripheral device being adapted to communicate the user selected arbitrary media content to the wireless communications network*

113. Ono disclose this limitation. For example, Ono discloses image display system 10 includes wireless connection module 44 (i.e., at least one peripheral

device) transfers the image information (*i.e.*, user selected arbitrary media content) to the network (*i.e.*, a wireless communications network). (See, *e.g.*, EX-1005, ¶¶0039 (“The three information terminal apparatuses 2A, 2B and 2C may be, for example, personal computers (PCs). Communications modules 44A, 44B and 44C, such as wireless connection modules, are also attached to the body of the information terminal apparatuses 2A, 2B and 2C, respectively, via a slot. ... In addition, they are also used for transmitting image information to the projector 60.”), 0055 (“[I]f the user inserts the wireless connection module 44 into the USB jack (slot) on the information terminal apparatus 2A, connection configuration for the wireless network will be completed, and transmission and reception of data with the projector 60 of the image display apparatus 1 that is already running will be carried out via the wireless network.”), 0144, FIGS. 1, 2, 16.)



(EX-1005, FIGS. 1 and 2.)

d. Limitation 1(c)/9(c): wherein the at least one peripheral device is a connection unit comprising:

114. Ono discloses this limitation. For example, Ono discloses that each wireless communication modules 44A, 44B, 44C (*e.g.*, “peripheral devices” are also connection modules (*e.g.* “connection units”) that couple to information terminal apparatuses 2A, 2B and 2C (*e.g.*, “a user processing device”). (*See, e.g.*, EX-1005, ¶0039 (“Communications modules 44A, 44B and 44C, such as wireless connection modules, are also attached to the body of the information terminal apparatuses 2A, 2B and 2C, respectively, via a slot.”).) Thus, Ono refers to wireless communication modules 44A, 44B, 44C in a similar manner. Also, Ono states that “[t]hese communications modules 44A, 44B and 44C are also used for transmitting and

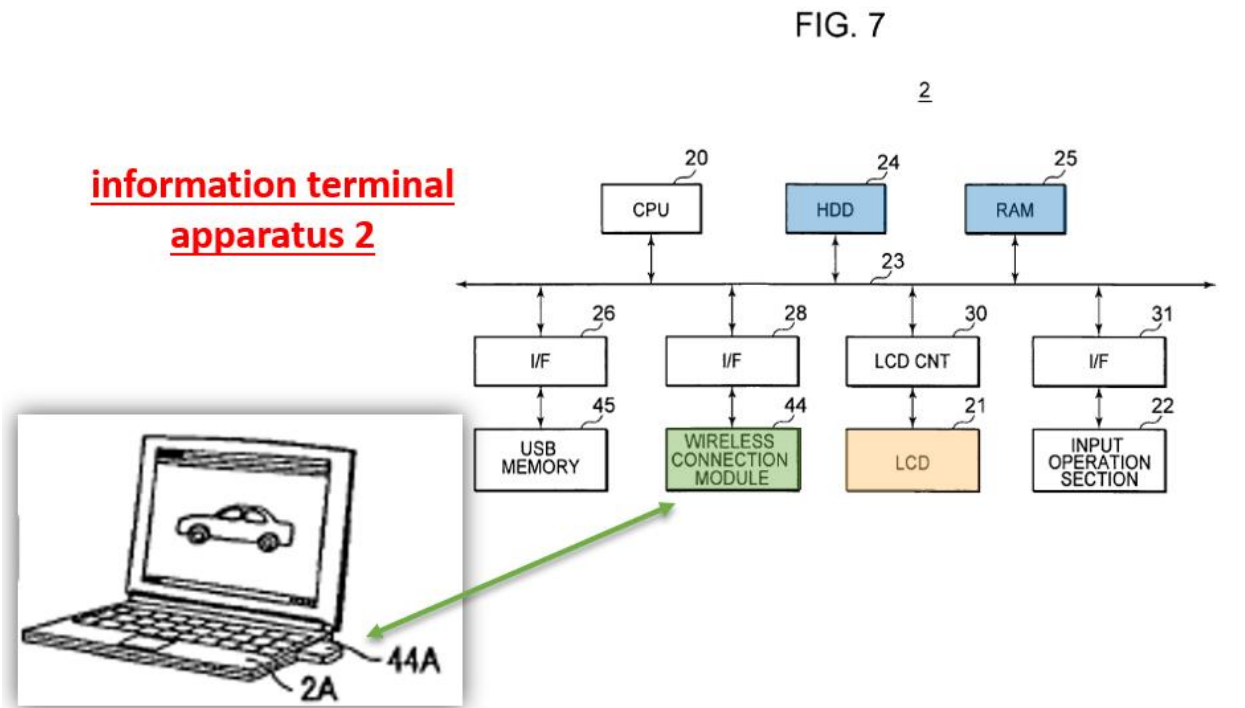
receiving request signals, response signals, rejection signals and the like for the connection and disconnection of communications with the communications module 40 of the projector 60.” (EX-1005, ¶0039.) In particular, communications modules 44A, 44B and 44C connect to the wireless network. (See, e.g., EX-1005, ¶¶0039, 0055.) Thus, each of Ono’s wireless communications modules 44A, 44B and 44C perform a similar function as to the connection units of the ’951 patent and at least for that reason would have been considered a connection unit. (EX-1001, 13:60-64; EX-1005, ¶¶0039, 0055.)

e. Limitation 1(d)/9(d): *the at least one peripheral device ... comprising (a) a connector adapted to couple to a port of a user processing device, the user processing device having a second display and a memory*

115. Ono discloses this limitation. For example, Ono discloses that each wireless communication modules 44A, 44B, 44C (e.g., “peripheral devices” and “connection unit”) couple to a slot (e.g., “a port”) of information terminal apparatuses 2A, 2B and 2C (e.g., “a user processing device”). (See, e.g., EX-1005, ¶¶0039 (“The three information terminal apparatuses 2A, 2B and 2C may be, for example, personal computers (PCs). Communications modules 44A, 44B and 44C, such as wireless connection modules, are also attached to the body of the information terminal apparatuses 2A, 2B and 2C, respectively, via a slot. ... In addition, they are also used for transmitting image information to the projector 60.”), 0054 (“The image display apparatus 1 may come with the wireless connection module 44 of a

USB (Universal Serial Bus) type, for the information terminal apparatus 2A,”), 0055 (“[I]f the user inserts the wireless connection module 44 into the USB jack (slot) on the information terminal apparatus 2A, connection configuration for the wireless network will be completed, and transmission and reception of data with the projector 60 of the image display apparatus 1 that is already running will be carried out via the wireless network.”), 0062 (“[I]nserting the plurality of wireless connection modules 44 into the respective other USB jacks, the user of the image display apparatus 1 may connect the image display apparatus 1 and the plurality of information terminal apparatuses 2A, 2B and 2C to the wireless network.”), FIGS. 1, 7, 16.)

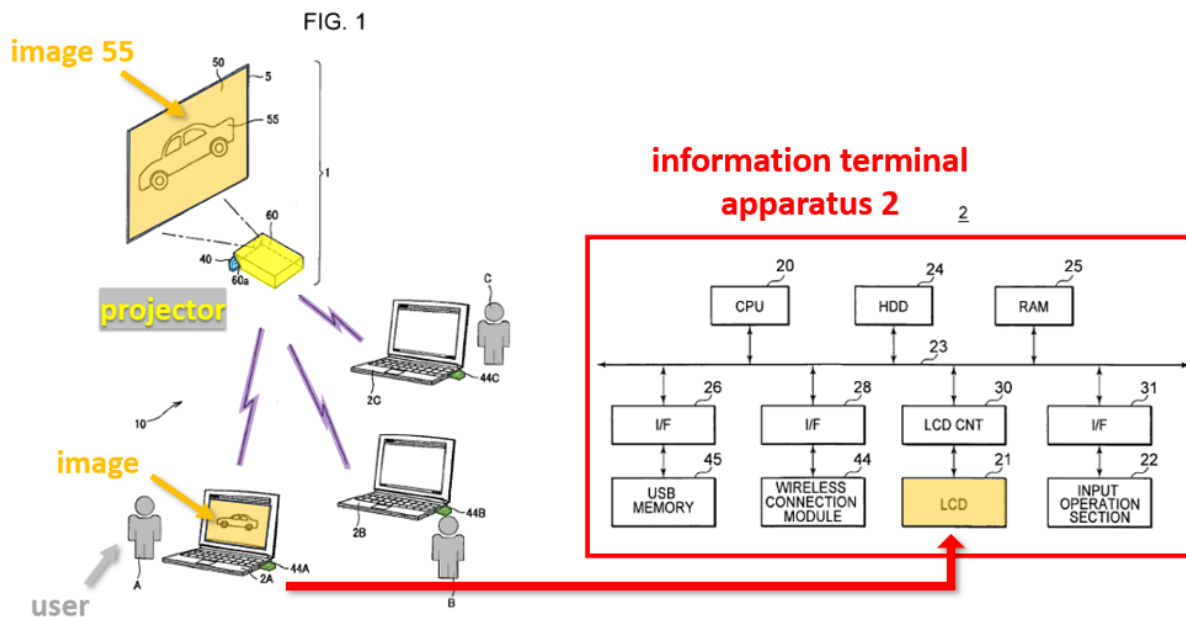
116. Further, a POSITA would have understood that, in describing connection module 44 being a USB (Universal Serial Bus) type” and inserted “into the USB jack (slot)” (EX-1005, ¶¶0054, 0055, 0062), connection module 44 includes a corresponding male USB connector for coupling the module to a respective USB slot. USB interfaces had standardized types of connectors, which was well understood and appreciated by a POSITA. (See, e.g., EX-1007, ¶0017; EX-1023, ¶0003 (“[D]evices connecting using the USB standard must have a physical connector that conforms to the standard: there are currently many applicable plug designs (e.g. Series A, Series B, Mini A, Mini B).”).)



(EX-1005, FIGS. 1 (excerpted), 7.)

117. Ono further discloses each information terminal apparatus 2 (*e.g.*, the “user processing device”) has an liquid crystal display 21 (*e.g.*, a second display) and include a hard disk drive (HDD) 24 and a random access memory (RAM) 25 (*e.g.*, a memory). (*See, e.g.*, EX-1005, ¶¶0073 (“FIG. 7 is a diagram showing a hardware configuration of the information terminal apparatus 2A (2B and 2C are also similar). A hard disk drive (HDD) 24 and a random access memory (RAM) 25 are connected to a CPU 20 via a bus 23. ... Further, an LCD controller 30 for controlling a liquid crystal display apparatus LCD 21 which is the above-mentioned display section of its own, and an I/F 31 for interfacing an input operation section 22 such as a keyboard or a mouse are connected to the CPU 20 via the bus 23. In

addition, it is assumed that image information to be sent out to the image display apparatus 1 is selected and displayed on the liquid crystal display apparatus LCD 21.”), FIGS. 1 & 7.)



(EX-1005, FIGS. 1 & 7.)

f. Limitation 1(e)/9(e): the at least one peripheral device ... comprising: ... (b) a transmitter for transferring user selected arbitrary media content to the wireless communications network

118. Ono discloses this limitation. For example, Ono discloses used for transmitting image information to the projector 60 wireless connection module 44A, 44B, 44C (e.g., “peripheral device” and “connection unit”) transfer image information (e.g., user selected arbitrary media content) to the wireless communications network. (See, e.g., EX-1005, ¶0009 (“In order to solve the problems above, an image display apparatus related to the present invention is an

image display apparatus including a display Section and communications means, and in which image information sent from one or more information terminal apparatuses via a network is received by the above-mentioned communications means and an image based on the above-mentioned image information is displayed on the above-mentioned display section..."); *see also id.*, ¶¶0035-0042, 0050-0056 ("A system configuration of software that is necessary for the hardware configuration of the image display apparatus 1 and the information terminal apparatus 2A is shown in FIG. 4. It is used in setting the connection configuration for the wireless network, or in transmitting and receiving image information and other control signals and the like via the wireless network."), 0062 (Thus, by simply inserting the plurality of USB memories 45, ... carrying out a predetermined installation operation, and inserting the plurality of wireless connection modules 44 into the respective other USB jacks, the user of the image display apparatus 1 may connect the image display apparatus 1 and the plurality of information terminal apparatuses 2A, 2B and 2C to the wireless network), 0068-0069, 0076 ("[As the user inserts the wireless connection module 44 into the PC card slot on the information terminal apparatus 2A, configuration for connecting to the wireless network is completed, and it becomes possible to transmit and receive data to and from the projector 60 of the image display apparatus 1, which is already running, via the wireless network."), 0088-0089, 0144, 0146, FIGS. 2-5, 7, 9.)

119. A POSITA would have understood that communication modules 44A, 44B, 44C each include a transmitter as necessary means for wireless transmission. For example, Ono discloses communication module 40 includes an antenna and transmission/reception chip for wireless transmission and that communication modules 44A, 44B, 44C perform a similar function of wireless transmission. (See, *e.g.*, EX-1005, ¶¶0052, 0054.) Thus, a POSITA would have understood communication modules 44A, 44B, 44C to include similar structure needed to modulate (and demodulate) the wireless transmission signal, such as an antenna and transmission/reception chip to serve as a transmitter and receiver of wireless data. (See, *e.g.*, EX-1024, ¶0028, FIG. 3; EX-1027, ¶¶0017-0018, FIG. 4.)

120. Also, Ono describes transmission according to well-known transmission protocols/specifications, such Bluetooth. (EX-1005, ¶0037.) A POSITA would have recognized that compliance with such standards would also involve the use of a transmitter to modulate the transmission signal. Corbett, for example, discloses a transmitter to transmit a modulated data signal according to well-known Bluetooth protocols or other standard wireless transmission protocols. (See, *e.g.*, Ex. 1007, ¶¶0018-0021.) Corbett thus further illustrates the knowledge of a POSITA and the understanding that Ono discloses a transmitter for transferring content to a wireless communication network.

- g. Limitation 1(f): the at least one peripheral device ... comprising: ... (c) an input device configured to allow the user to carry out a user action on the input device that triggers transfer of said user selected arbitrary media content from the transmitter to the wireless communications network and to the base node through the wireless communications network for display on the first display, the input device being a physical actuator coupled to the at least one peripheral device***

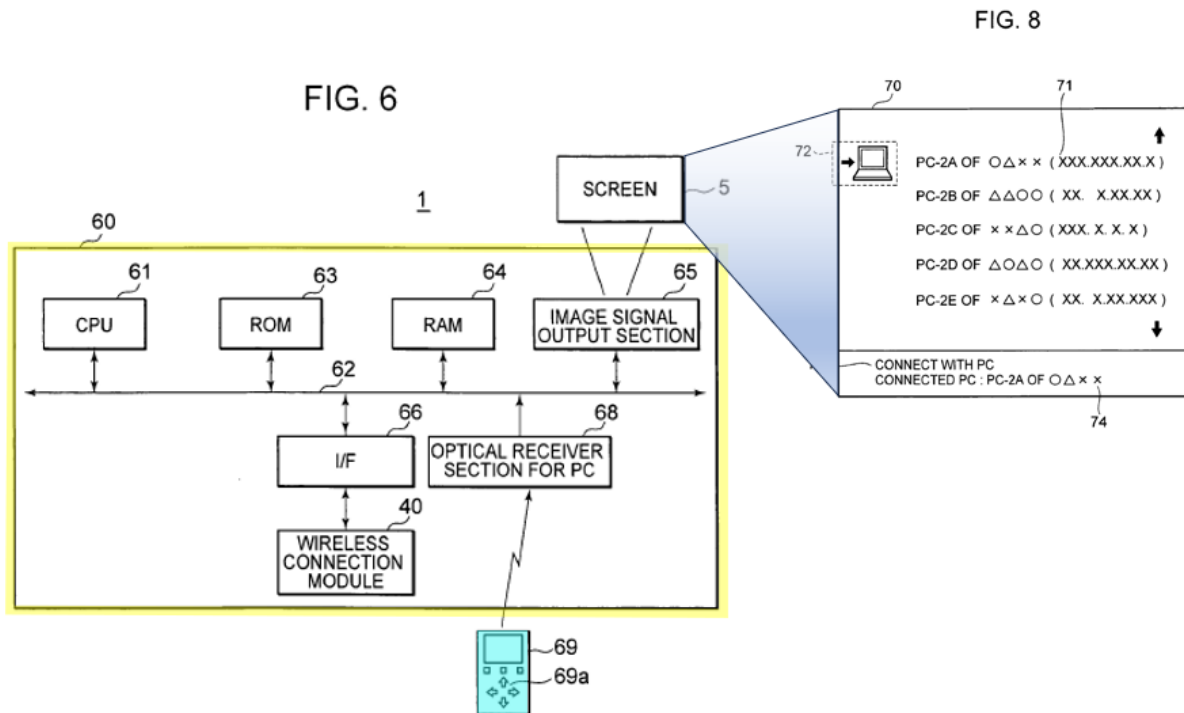
Limitation 9(f): an input device configured to allow the user to carry out a user action on the input device that triggers transfer of said user selected arbitrary media content from the transmitter to the wireless communications network and via the wireless communication network to the base node for display on the first display

121. Ono alone or in view of the teachings/suggestions by Corbett and the knowledge of the state of the art by a person of ordinary skill in the art at the time, discloses and/or would have suggested the features of these limitations.

122. For example, Ono discloses a remote controller 69 (*e.g.*, an “input device”) configured to allow the user to carry out selection (*e.g.*, a “user action”) of the particular information terminal apparatus. Upon selection of a particular information terminal apparatus 2A, 2B, 2C, the respective communication module 44A, 44B, or 44C sends image information (*e.g.*, “user selected arbitrary media content”) to the image display apparatus 1 via the wireless network for display on screen 5, as I discussed above. (*See, e.g.*, EX-1005, ¶¶0066 (“The remote controller 69 is an example of the selecting section 69 shown in FIG. 3, and selects one

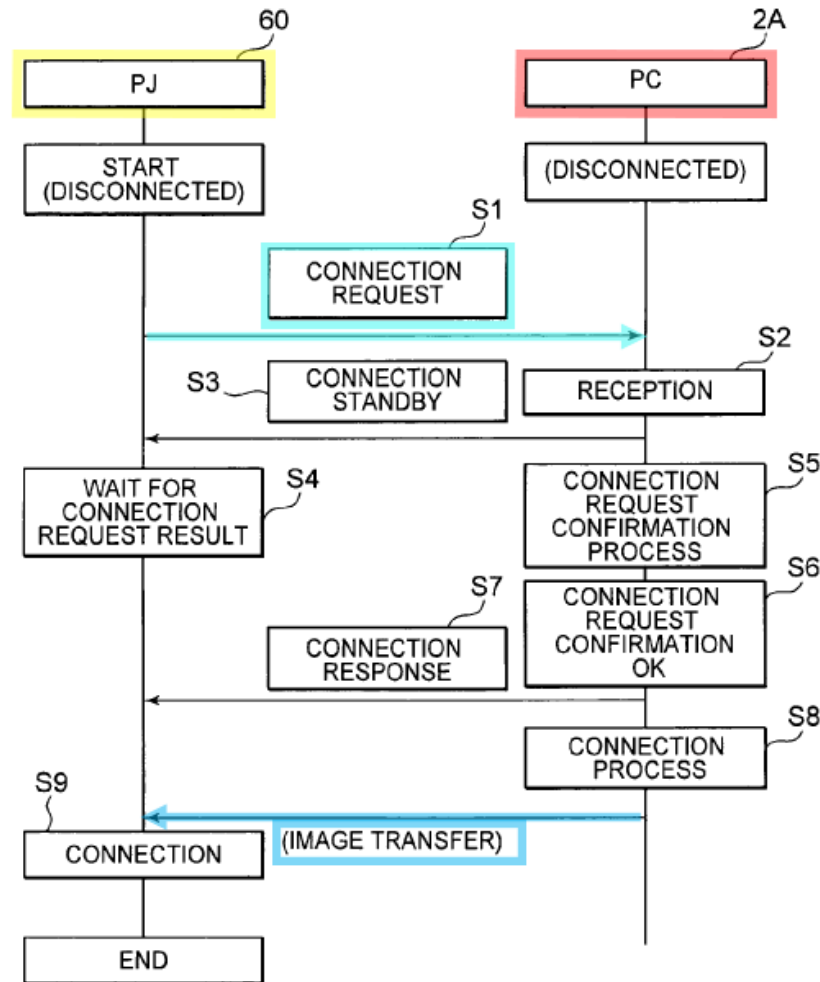
information terminal apparatus from the list 71 displayed on the screen 5. In addition, using the remote controller 69, operations such as configuring the connection to the wireless network, switching the connection and disconnection with the plurality of information terminal apparatuses, and so forth are performed.”), 0067-0072, 0078, 0080-0089; *see also* my discussion above regarding transmission of the image information for display on screen 5).)

123. Ono discloses that remote controller 69 can call up list 71 of available PCs (FIG. 8) for connection to the image display apparatus. (EX-1005, ¶¶66-72, 77-78.) The user presses the up/down selection key on remote controller 69 to select a particular PC and then presses the confirm (enter) key when the user reaches the desired PC. (EX-1005, ¶¶66-72, 77-78.) This selection triggers a connection process between the selected information terminal apparatus and the image display apparatus, which results in the transfer of the image information from the wireless connection module 44 to the wireless network and communications module 40 via the network. Once received the image information is displayed on screen 5. (EX-1005, ¶¶0066-0070, 0077-0078, 0080-0089, FIGs, 6, 8, 9.)



(EX-1005, FIGS. 6, 8.)

124. Specifically, according to one embodiment, the user pressing the confirm (enter) key on remote controller 69 to select a particular PC initiates a connection request S1 from the projector 60 to the selected PC 2A, as illustrated in Figure 9 (below). (EX-1005, ¶0083 (“In the sequence diagram of FIG. 9, the connection request signal generated by the CPU 61 of the projector 60 of the image display apparatus 1 with respect to the information terminal apparatus 2A selected by the remote controller 69 is handed over to the wireless connection module 40 via the I/F 66, and is transmitted from the wireless connection module 40 to the wireless connection module 44 of the appropriate information terminal apparatus 2A in Step S1.”))



(EX-1005, FIG. 9.)

125. After confirmation process, selected PC 2A will transfer its image information to the projector 60 for display. (EX-1005, ¶0088 (“As a result, the CPU 20 of the selected information terminal apparatus 2A transmits the image information signal displayed on the liquid crystal display apparatus 21 to the wireless connection module 40 of the projector 60 from the wireless connection module 44 via the I/F 28.”).) Thus, selecting a particular PC with the remote controller 69 triggers transfer of the image information from the display of the selected PC for

display by the projector. As discussed above, this image information transfer is sent via the network channel established between the wireless communication modules. Hence, Ono discloses limitation 9(f).

126. Ono discloses that after having connected the desired PC to the projector 60 in the manner described above, remote controller 69 can also be used to fast-forward/rewind images on the PC screen and, in conjunction therewith, the images projected on screen 5. (EX-1005, ¶70 (by selecting the appropriate keys on the remote controller 69, “the CPU 61 generates the respective transmission control data corresponding to the command, and sends the respective transmission control data from the wireless connection module 40 to the wireless connection module 44 of the information terminal apparatus 2 via the I/F 66. The information terminal apparatus 2 interprets the control data for fast forwarding/rewinding images, which is received through the wireless connection module 44, and fast forwards/rewinds the image information displayed on its display section. In conjunction there with, the image projected onto the screen 5 of the image display apparatus 1 is also fast forwarded/rewound.”).)

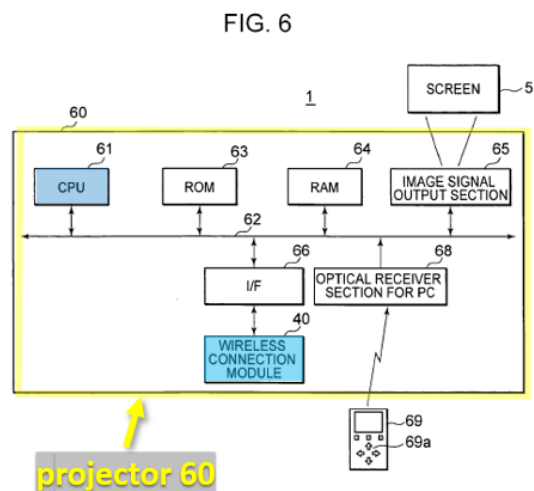
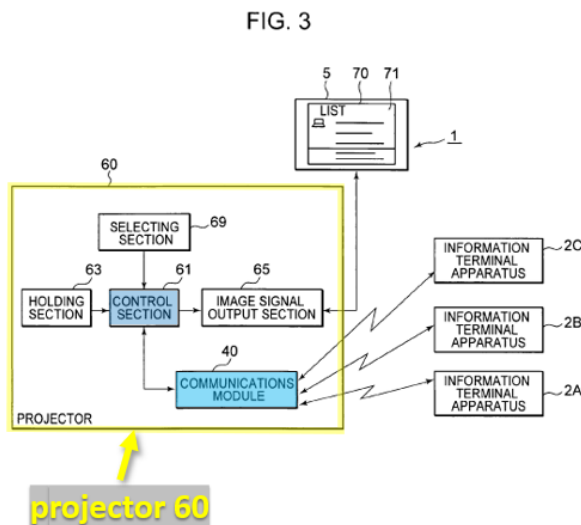
127. A POSITA would have understood this fast-forwarding/rewinding may be accomplished in a manner similar to the one discussed above, *i.e.*, pressing the appropriate keys on the remote controller 69 triggers additional transmissions of

image information from the connected PC to the projector 60. Thus, in this additional manner, Ono discloses limitation 9(f).

3. Claims 2, 10, and 17: *wherein said base node is integrated in the first display*

128. Ono discloses and/or suggests this limitation. For example, as discussed above regarding limitation 1(a)/9(a), Ono discloses that image display apparatus 1 includes, among other things, control section 61 (also referred to as central processing unit (CPU) 61) (*e.g.*, “a base node”), which is integrated into image display apparatus 1 (*e.g.*, “a first display”), including projector 50. (*See, e.g.*, EX-1005, ¶¶0042 (“FIG. 3 is a block diagram schematically showing a configuration of the image display apparatus 1. The image display apparatus 1 is comprised of the screen 5 and the projector 60, receives, through the communications module 40, such as a wireless connection module, image information that is sent from the above-mentioned three information terminal apparatuses 2A, 2B and 2C via the network, and displays an image based on the image information on the screen 5.”), 0043 (“The projector 60 is comprised of 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.”), 0050-0052 (“This wireless connection module 40 may be of a CF (Compact Flash) card type including an antenna and a transmission/reception chip, and may be used by inserting it into a dedicated slot 60a provided on the projector 60 of the image display apparatus 1. More specifically,

transmission data is sent from a CPU described later to a baseband processing Section via a communications control section or an I/F section, signal processed at the baseband processing section, impressed upon a carrier wave at an RF processing section, and wirelessly transmitted to a device in its vicinity from the wireless communications antenna. On the other hand, radio waves wirelessly transmitted from devices in the vicinity are communicated to the CPU described later via the communications control section or the I/F section after being received by the local wireless communications antenna, having signals extracted at the RF processing section, and being signal processed at the baseband signal processing section.”), 0089 (“The wireless connection module 40 of the projector 60 receives the image information transmitted from the information terminal apparatus 2A. The CPU 61 receives the above-mentioned image information via the I/F 66, and based thereon, makes image signals based on the above-mentioned image information be output by the image signal output section 65, and projects and displays the image from the information terminal apparatus 2A on the screen 5.”), FIGS. 1-3, 6, 7, 9.)



(EX-1005, FIGS. 3, 6.)

129. Further, the '951 patent describes the purported invention in broad terms. (“References to logic, hardware, processor or circuitry can encompass any kind of logic or analog circuitry, integrated to any degree, and not limited to general purpose processors, digital signal processors, ASICs, FPGAs, discrete components or transistor logic gates and so on.”), 15:40-52 (“The connection unit 47 may integrated into a user processing device 31, e.g. as an internal peripheral device or may preferably be an external peripheral device comprising a connector adapted to couple to a port of a user processing device 31.... The optional connection unit 49 may integrated into the base node 36, e.g. as an internal peripheral device or may be an external peripheral device comprising a connector adapted to couple to a port of the base node 36.”).) Thus, a POSITA would have considered Ono’s wireless communications module 40 and control section 61 to be “integrated” in the image

display apparatus 1, and specifically in projector 60 because control section 61 is an internal component of projector 60 and wireless communications module 40 has a connector adapted to couple to a port of the projector 60, much like the example in the '951 patent.

130. Beyond Ono's disclosure, a POSITA would have also known that integration of components was a common design choice that would have reduced complexity by eliminated the need for a separate wireless communications module and the need to couple it to the projector. (*See, e.g.*, EX-1027, ¶0049 (“In a particular embodiment of the present invention, the receiver 110 may be integrated into the display device, thus further reducing complexity and the need of providing a cable between the receiver 110 and the display device.”).) Therefore, a POSITA would have been motivated to integrate a base node (like Ono's wireless communications module 40 and control section 61) with a display (for example, like Ono's projector 60) to reduced complexity and eliminate the need for the wireless module as a separate device. A POSITA would have had a reasonable expectation of success in achieving such integration as it would have involved the use of known components and known techniques that were within the conventional knowledge and abilities of a POSITA. For example, both Kaplan and Ichieda describe similar arrangements including a wireless communication receiving module that may be incorporated within a display device as an alternative to the receiving module being a separate

device. (See, e.g., EX-1027, ¶0049; EX-1006, ¶0060 (“The communication section 63 is a wireless LAN card ... and is capable of performing transmission and reception of data relating to the wireless LAN connection, reception of the image signal, and so on in response to the instructions of the control section 55.... It should be noted that it is sufficient for the communication section 63 to be a wireless terminal device capable of connecting the wireless LAN, and the communication section 63 can be arranged to use a wireless LAN adaptor to be attached to the USB port, or a wireless [LAN] module previously built-in in the projector 50.”).)

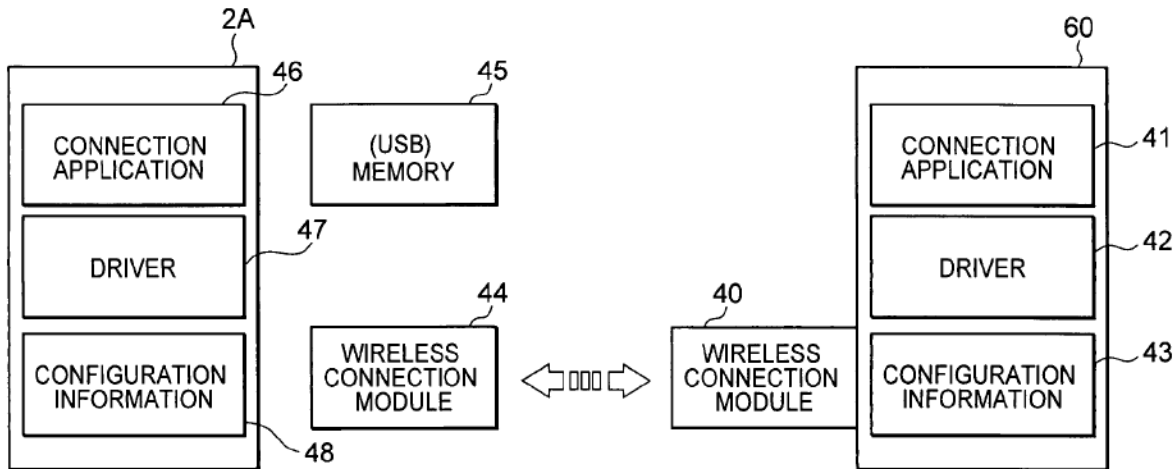
4. ***Claim 3: a program adapted to be loaded onto the user processing device and to run on an operating system of the user processing device, said program being adapted to obtain said user selected arbitrary media content from the user processing device***

Claim 18: the step of loading a program onto the user processing device and running the program on the operating system of the user processing device to obtain user selected arbitrary media content

131. Ono discloses and/or suggests this limitation. For example, Ono discloses a connection application 46 and a driver 47 (e.g., a program) adapted to be loaded onto the information terminal apparatus (e.g., user processing device) and to run on its operating system. It was well known to a POSITA that information terminal apparatus, like a personal computers (PC) 2A, 2B, 2C, 2C, included operating systems to perform fundamental functions, such as loading and running applications and communicating with peripheral devices, like wireless

communication module 40. (See, e.g., EX-1021, ¶¶0003-0004.) Thus, when Ono describes executing (*i.e.*, running) the connection application 41 and using a driver 47 Ono's driver/application obtain image information (*e.g.*, user selected arbitrary media content) from the information terminal apparatus, a POSITA would have understood that the program is loaded and run by an operating system. (See, e.g., EX-1005, ¶¶0050-0054, 0055 ("In order 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 apparatus 2A. As a result, an installer will automatically be activated on the information terminal apparatus 2A, and the connection application 46, the driver 47 and the configuration information 48 will automatically be stored in the HDD (Hard Disk Drive). Then, if the user inserts the wireless connection module 44 into the USB jack (slot) on the information terminal apparatus 2A, connection configuration for the wireless network will be completed, and transmission and reception of data with the projector 60 of the image display apparatus 1 that is already running will be carried out via the wireless network."), 0076.) Once the connection application 46, the driver 47 are stored in the hard drive, the computer must load the application from the hard drive and run the application to complete the connection.

FIG. 4



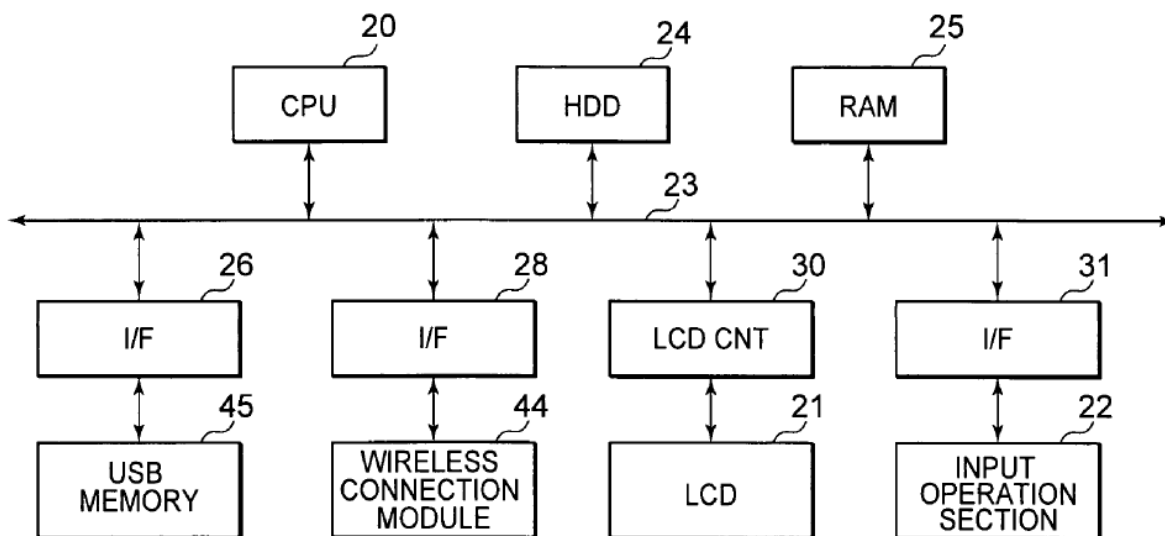
(EX-1005, FIG. 4.)

5. **Claim 4: *The electronic meeting tool of claim 1, wherein the at least one peripheral device is a plug-and-play device***

132. Ono discloses and/or suggests the limitation of claim 4. For example, Ono discloses that wireless communications module 44 is a USB-type device (EX-1005, ¶¶0054, 0073, 0076, FIG. 7) and the '951 patent identifies a USB device as an example of a plug-and-play device. (EX-1001, 9:46-59; *see also* EX-1007, ¶0003; EX-1021, ¶¶0003-0004.) Indeed, Ono illustrates in Figure 7 that wireless communications module 44 is connected to information terminal apparatus 2 via an interface 28 and common bus 23. (EX-1005, ¶0073.)

FIG. 7

2



(EX-1005, Figure 7.)

Ono explains that, when wireless communications module 44 is plugged into the information terminal apparatus via a USB jack, it is automatically configured to work and thus it functions as a plug-and-play device from both a hardware and software perspective. (See EX-1005, ¶0055 (“[I]f the user inserts the wireless connection module 44 into the USB jack (slot) on the information terminal apparatus 2A, connection configuration for the wireless network will be completed, and transmission and reception of data with the projector 60 of the image display apparatus 1 that is already running will be carried out via the wireless network.”).) Based on these disclosures, a POSITA would have understood that wireless

communications module 44 functions as a plug-and-play device consistent with the description in the '951 patent. (EX-1001, 9:46-59; Section VII.D.)

6. Claim 6: *The electronic meeting tool according to claim 1, wherein at least one channel is formed between the transmitter of the at least one peripheral device over the wireless communications network to the base node that is independent from the networking capability of the user processing device*

133. Ono disclose and/or suggests this limitation. For example, Ono discloses that “[t]he image display system 10 is a system that makes up a wireless network by connecting an image display apparatus 1 and three information terminal apparatuses 2A, 2B and 2C to a wireless communications channel.” (EX-1005, ¶¶0036, 0037.) In particular, “information terminal apparatus 2A, for example, ... transmits [image information] to the communications module 40 of the projector 60 through the communications module 44A.” (EX-1005, ¶0041.) Then “projector 60 of the image display apparatus 1 receives, through the communications module 40, ... image information wirelessly transmitted from the information terminal apparatus 2A via the above-mentioned wireless communications channel, and projects it onto the display screen 50 of the screen 5 as an enlarged image 55 after converting it into decrypted image information.” (*Id.*)

134. Ono describes wireless communications channel as “one that utilizes a transmission path other than a wire cable, such as radio waves and infrared ray.” (EX-1005, ¶0037.) Ono gives specific examples, including those using a Bluetooth

standard, including “those for Direct Sequence Spread Spectrum (DSSS) wireless communications, which utilize the 2.4 GHz ISM (Industrial, Scientific and Medical) band which is the same as that adopted in wireless LAN (WLAN) communications compliant with the IEEE 802.11 specifications.” Such wireless communications techniques require a transmitter to modulate the transmission signal according to these standards. (See, e.g., EX-1033, ¶¶0035, 0070.)

135. Thus, a POSITA would have understood Ono to disclose a wireless communications channel is formed between a transmitter of the communications module 44 (e.g., at least one peripheral device) over the wireless communications network to control section 61 of the image display apparatus (e.g., the base node). Because this dedicated channel is formed through a peripheral device (i.e., through communication module 44), a POSITA would have understood that it is independent from the networking capability of information terminal apparatus. (See, e.g., EX-1021, ¶0050.)

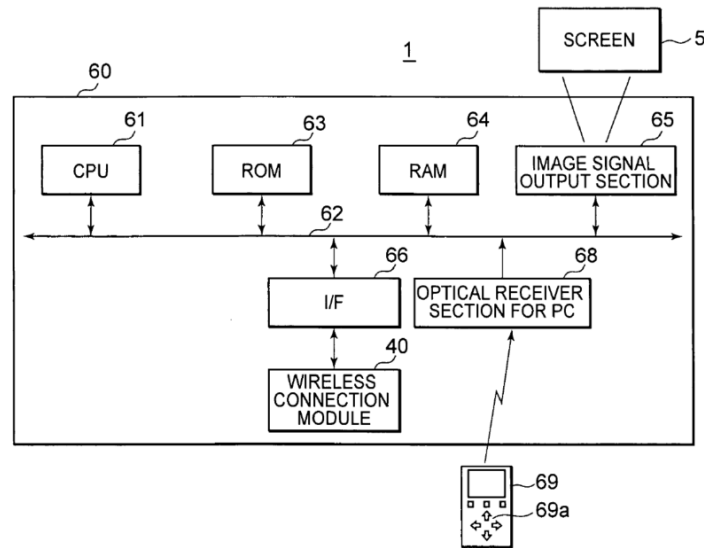
7. ***Claim 7: The electronic meeting tool according to claim 1, wherein the at least one peripheral device is configured to encode, compress, and/or encrypt the user selected arbitrary media content when transmitting the user selected arbitrary media content from the transmitter to the base node of the wireless communications network***

136. Ono discloses and/or suggests this limitation. For example, Ono discloses that “information terminal apparatus 2A, for example, encrypts image information ... through the communications module 44A.” (EX-1005, ¶0041; see

also id., ¶¶0056 (“The network mode, network name, network channel and method of data encryption mentioned above are information relating to the configuration of the wireless connection modules 40 and 44.”), 0059, 0063, 0152-0155, FIG. 18; *see also* EX-1007, ¶0019, FIG. 2.) Further, as previously discussed in regard to claim 1, a POSITA would have understood communications module 44A to include a transmitter that transfers image information to a wireless communications module 40 and control section 61 (a base node) via a network. Ono further discloses that this communication channel between the communications modules may be encrypted using a WEP standard, for example. (EX-1005, ¶¶0056, 0059.)

8. Claims 8 and 15: *wherein the first display has a processing unit and the base node is integrated into the processing unit*

137. Ono disclose and/or suggests this limitation. For example, Ono discloses that “projector 60 [of image display apparatus 1] is comprised of 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, ¶0043; *see also id.*, ¶¶0044-0046, 0050 (“[T]he image information apparatus 1 whose configuration is shown in FIG. 3 ... adopt[s] a hardware configuration that centers around a CPU (Central Processing Unit).”), 0052, FIGS. 3, 6.) See also my discussion regarding claim 2 with respect to the base node being integrated into the processing unit.



(EX-1005, FIG. 6.)

9. Claim 11: *The electronic meeting tool according to claim 9, wherein the input device is displayed on the second display*

138. The combination of Ono and Corbett discloses and/or suggests this limitation for reasons similar to those I explained above for limitation 1(f). (See analysis in Sections IX.A.1, IX.A.2(g).)

139. Further, as discussed above, Corbett suggests one possible design choice in implementing a user input device (namely, included as part of a peripheral device). Corbett’s teachings in this regard, however, are not limited to placement of the input device on the peripheral device. Corbett also teaches other known techniques for implementing such a user input device, stating “[t]ransfer of data from the nonvolatile memory to the external device 150 through the transmitter 122 may be initiated by any appropriate method or device.” (EX-1007, ¶0022.) For example, Corbett discloses that “the user may provide a transmission initiation indication

through the host computer system to initiate transmission of data to an external device.” (*Id.*) In particular, a client driver of the host computer system 102 may provide “displayed button, or other appropriate user interface or selector which allows a user to initiate transfer of data.” (*Id.*) According to Corbett, the host computer system may communicate the transmission initiation indication to the USB flash drive through the USB connection and, “[i]n response to the transmission initiation indication, the transmitter may transmit data to the external device.” Thus, Corbett suggests that an input device for triggering transmission of information may be displayed on a display of the host computer.

140. For reasons similar to those discussed above with respect limitation 1(f), a POSITA would have been motivated to implement an image display system like that of Ono with display button for triggering transmission of image information from an information terminal apparatus to an image display apparatus. In view of the teachings/suggestions of Corbett and knowledge of a person of ordinary skill in the art, a person of ordinary skill in the art would have been motivated to modify an image display system like that of Ono to include input device on the display of an information terminal apparatus to provide known user input functionalities. A person of ordinary skill in the art would have appreciated and understood, and thus been motivated therefrom, that implementing user input on a display of the user’s information terminal apparatus in the modified image display system would have

allowed the system to benefit from known techniques. When configuring and implementing Ono's modified image display system, a person of ordinary skill in the art would have contemplated various ways to improve the design and facilitate such user input functionality, and such a skilled person would have recognized that a displayed button, for example, was one predictable way among known ways to allow user input. (See, e.g., state of art disclosures, such as, EX-1025, ¶¶0002, 0058, 0072, 0088, 0090, 0111, FIGS. 2, 10, 12, & 20.)

- 10. Claim 13: *The electronic meeting tool according to claim 9, wherein the input device is on a keyboard connected to the user processing device, is displayed on the second display and is able to be activated with a mouse pointer connected to the user processing device, or is displayed on the second display which is a touch screen and is able to be activated by the user action of touching the input device***

141. The combined teachings of Ono and Corbett disclose and/or suggest at least the second option of claim 13 (i.e., is displayed on the second display and is able to be activated with a mouse pointer connected to the user processing device). As discussed with respect to claim 12, Corbett suggests an implementation of the input device as a “displayed button, or other appropriate user interface or selector which allows a user to initiate transfer of data.” (EX-1007, ¶0022.) A POSITA would have understood from context that Corbett's reference to a displayed button refers to a virtual button on a display of the host computer screen (e.g., a second display). Applying this teaching to an image display system like that of Ono, a

POSITA would have immediately envisioned a button displayed on the display of an information terminal apparatus (a host computer), such as on LCD screen 21 of a laptop, as illustrated in Figures 1 and 7 of Ono. (EX-1005, ¶0073, FIGS. 1 & 7.) A POSITA would have also understood that Ono's information terminal apparatus includes a mouse as an input operation section 22. A POSITA would have also appreciated how a mouse conventionally controls a pointer on a display screen and enables a user to click on "buttons" displayed on the screen. Thus, a POSITA would have immediately envisioned that Corbett's reference to a displayed button on a host computer additionally encompassed conventional ways to activate the displayed button. The most common way being activation with a mouse pointer connected to the host computer, as with Ono's mouse connected to information terminal apparatus 2A, 2B, and 2C.

142. For all of reasons discussed above with respect limitation 12, a POSITA would have been motivated to implement an image display system like that of Ono with a displayed button displayed on the display of an information terminal apparatus and able to be activated with a mouse pointer connected to the user information terminal apparatus. When configuring and implementing Ono's modified image display system, a person of ordinary skill in the art would have contemplated various ways to improve the design and facilitate such user input functionality, and such a skilled person would have recognized that a displayed

button and mouse pointer, for example, was one predictable way among known ways to allow user input. (See, e.g., state of art disclosures, such as, EX-1025, ¶¶0002, 0058, 0072, 0088, 0090, 0111, FIGS. 2, 10, 12, & 20.)

11. Claim 14: *The electronic meeting tool according to claim 9, wherein the at least one peripheral device further comprises an optical indicator for providing a visual indication of changes in state of the at least one peripheral device including when the user selected arbitrary media content is being transmitted by the at least one peripheral device*

143. The combined teachings of Ono and/or Corbett further disclose and/or suggest the limitations of claim 14. For example, Corbett discloses that “it may be suitable for the USB flash drive and/or external device to include a transmission direction selector such as an arrow, selector, switch, and the like to indicate the data flow to be used if transmission is initiated.” Corbett further discloses that “the USB flash drive 100 may include one or more selectors 130, to indicate whether the USB flash drive is the transmitter of data and/or the receiver of data to/from the external device 150.” (EX-1007, ¶0023.)

12. Claim 16

144. Ono alone or in combination with disclose and/or suggest all the limitations of claim 16, as discussed below.

a. Limitation 16(pre): *A method for communicating arbitrary media content from users at a meeting comprising:*

145. Ono discloses this limitation for reasons similar to those I explained above for limitation 1(pre). (See analysis in Section IX.A.2(a).)

b. Limitation 16(a): *operating a first display, wherein the first display is coupled to a base node, the base node being adapted to receive user selected arbitrary media content from a peripheral device via a wireless communications network and to control display of the user selected arbitrary media content on the first display*

146. Ono discloses first display is coupled to a base node, the base node being adapted to receive user selected arbitrary media content from a peripheral device via a wireless communications network and to control display of the user selected arbitrary media content on the first display for reasons similar to those I explained above for limitation 1(a). (See analysis in Section IX.A.2(b).) Further, Ono discloses that “[t]he image display apparatus 1 is comprised of a screen 5, which is an example of a display section, and an image projection apparatus (projector) that projects an image 55 onto a display screen 50 of the screen 5.” (EX-1005, ¶0038.) Hence, Ono discloses operating a first display.

c. Limitation 16(b): *connecting the peripheral device to a port of a user processing device and communicating the user selected arbitrary media content to the wireless communications network*

147. Ono discloses this limitation for reasons similar to those I explained above for limitations 1(d) and 1(e). (See analysis in Sections IX.A.2(e), (f).)

d. Limitation 16(c): *triggering transfer of said user selected arbitrary media content from said transmitter on the peripheral device to the wireless communications network and to the base node for displaying said user selected arbitrary media content on the first display, the input device being a physical actuator coupled to the peripheral device*

148. Ono discloses triggering transfer of media content to the wireless communications network and to the base node for display on the first display, as I explained above for limitations 1(pre) and 1(f). Also, Ono discloses that, when remote controller 69 selects a particular information terminal apparatus (such as information terminal apparatus/PC 2A), a “connection request signal [is] generated by the CPU 61 of the projector 60 of the image display apparatus 1 with respect to information terminal apparatus 2A selected by the remote controller 69 [which] is transmitted from the wireless connection module 40 to the wireless connection module 44 of the appropriate information terminal apparatus 2A.” (Ex. 1005, ¶83; see also *id.*, ¶¶82-90, FIG. 9.) The remote controller is indirectly “coupled to” the communication/connection module 44 according to the description of “coupled” in the ’951 patent. (EX-1001, 13:17-24 (defining “coupled”).) For example, the ’951

patent indicates that “coupled” should include indirect coupling, such that “there exists a path between an output of A and an input of B which may be a path including other devices or means.” (EX-1001, 13:17-24.) As described in ¶83 of Ono, for example, the output of the remote controller 69 (including buttons (“physical actuator”) of operation section 69a) has a path to the input of wireless communications module 44A. Therefore, a POSITA would have understood the remote controller to be “coupled to” wireless communications module 44A, in the context of the ’951 patent.

149. Regarding Corbett, transmission initiation selector 134 physically resides on the peripheral device (USB flash drive 100) and in that more direct sense is physically “coupled to” the peripheral device. (EX-1007, ¶¶22-23, 28-29, FIG. 1.) The combination of Ono and Corbett (discussed above regarding limitation 1(f)) suggests the addition of a input device and physical actuator on a peripheral device (like wireless communications module 44A). (See my analysis in Sections IX.A.1, IX.A.2(g).) For similar reasons, the combination suggests using such a modified device to trigger transfer of user selected arbitrary media content from a transmitter on a peripheral device to a wireless communications network and to a base node for displaying said user selected arbitrary media content on a first display, where an input device is a physical actuator coupled to the peripheral device.

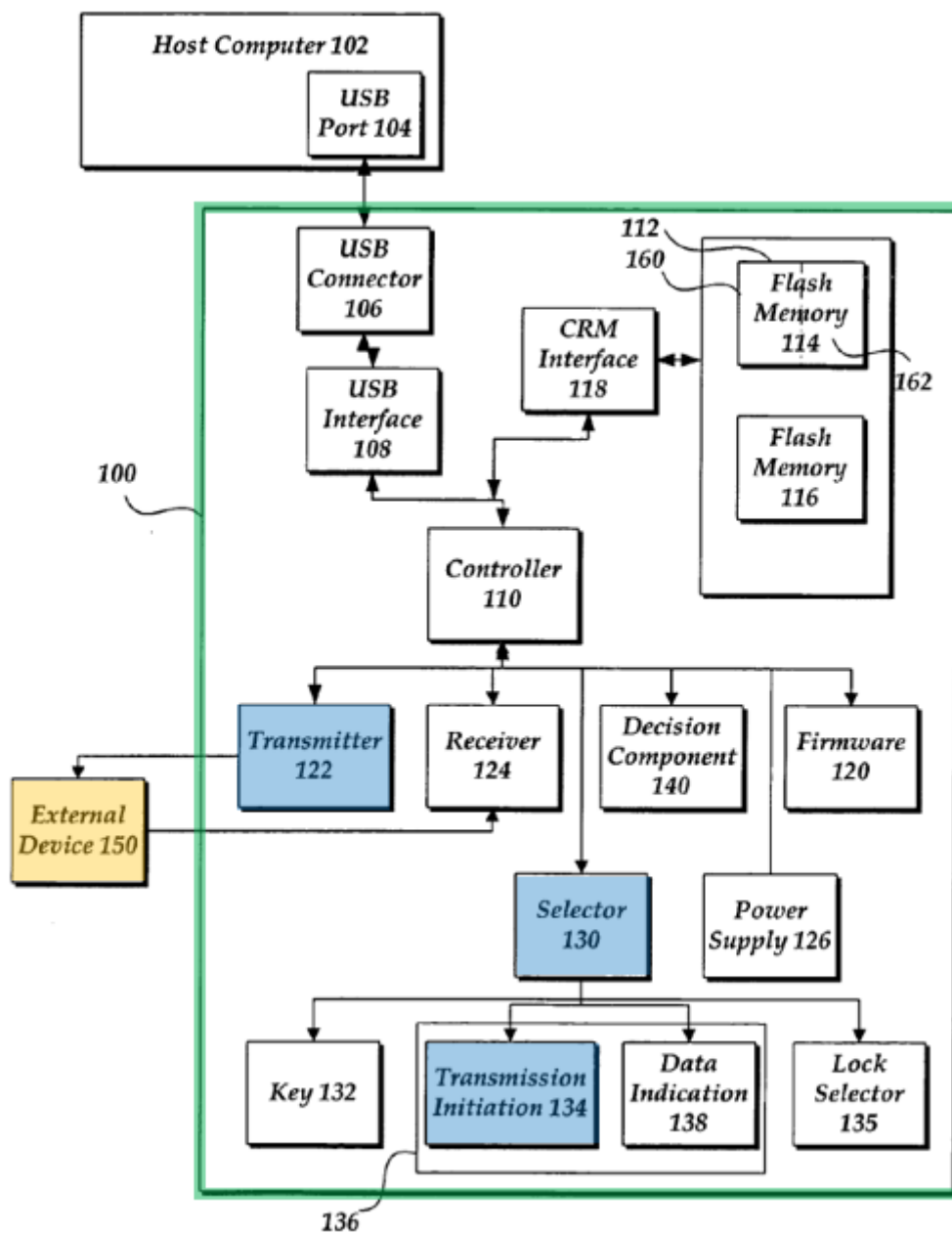


Fig. 1

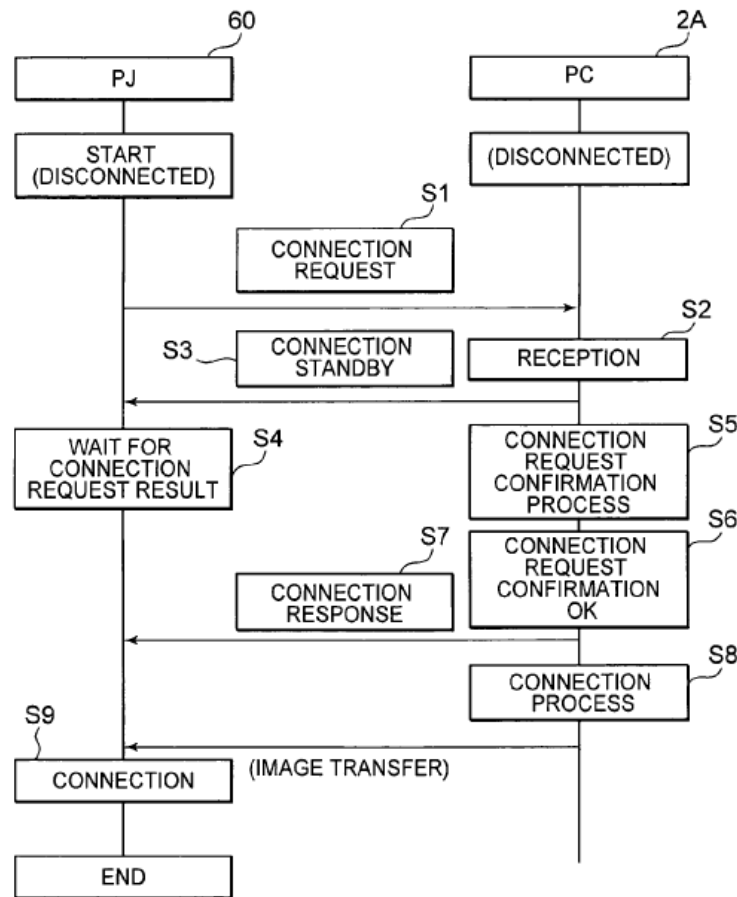
(Ex-1007, FIG. 1.)

13. Claim 19: *The method of claim 16, further comprising configuring the peripheral device to connect to the wireless communications network by pairing the peripheral device with the base node*

150. Ono discloses the limitations of claim 19. For example, Ono discloses configuring the communications module 44 (*e.g.*, the “peripheral device”) to connect to the wireless communications network by pairing the communications module 44 with projector 60 and hence the control 61 (*e.g.*, a “base node”). (*See, e.g.*, EX-1005, 0055 (“In order 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 apparatus 2A. As a result, an installer will automatically be activated on the information terminal apparatus 2A, and the connection application 46, the driver 47 and the configuration information 48 will automatically be stored in the HDD (Hard Disk Drive). Then, if the user inserts the wireless connection module 44 into the USB jack (slot) on the information terminal apparatus 2A, connection configuration for the wireless network will be completed, and transmission and reception of data with the projector 60 of the image display apparatus 1 that is already running will be carried out via the wireless network.”).) Ono further illustrates specific steps for establishing a connection between the information terminal apparatus and the image display apparatus via communication modules 40, 44 in Figure 9 (below). (EX-1005, ¶¶0083-0090.) As illustrated,

projector 60 and PC 2A start disconnected and, through a series of steps S1-S9, end connected to each other to allow for transfer of information (i.e., paired).

FIG. 9



(EX-1005, FIG. 9.)

14. Claim 20: The method of claim 16, further comprising displaying user selected arbitrary media content on the first display in accordance with a set of rules

151. Ono discloses the limitation of claim 20. For example, Ono discloses displaying image information (e.g., “user selected arbitrary media content”) on the image display apparatus (e.g., the “first display”) in accordance with a set of rules,

such as for display control operations (switching information terminal apparatus, fast forwarding/rewinding, blackout, *etc.*). (EX-1005, ¶¶0068-0072); *see also id.*, ¶¶0077-0097, 0111-0126, FIGS. 9, 10, 13.)

15. Claim 21

152. Ono alone or in combination with Corbett disclose and/or suggest all the limitations of claim 21.

a. Limitation 21(pre): An electronic meeting tool for communicating user selected arbitrary media content from users at a meeting comprising:

153. Ono discloses this limitation for reasons similar to those I explained above for claim 1(pre). (See analysis in Section IX.A.2(a).)

b. Limitation 21(a): a base node...the base node being adapted to receive user selected arbitrary media content from a user processing device via the wireless communications network, and to control display of the user selected arbitrary media content on the first display

154. Ono discloses this limitation for reasons similar to those I explained above for limitation 1(a). (See analysis in Section IX.A.2(b).)

c. Limitation 21(b): the base node being integrated into a first display of a wireless communications network

155. Ono discloses this limitation for reasons similar to those I explained above for claim 2. (See analysis in Section IX.A.3.)

d. Limitation 21(c): at least one peripheral device adapted to communicate the user selected arbitrary media content from the user processing device to the wireless communications network

156. Ono discloses this limitation for reasons similar to those I explained above for limitation 1(b). (See analysis in Section IX.A.2(c).)

e. Limitation 21(d): wherein the at least one peripheral device is a connection unit comprising

157. Ono discloses this limitation for reasons similar to those I explained above for limitation 1(c). (See analysis in Section IX.A.2(d).)

f. Limitation 21(e): (a) a connector adapted to couple to a port of the user processing device, the user processing device having a second display and a memory

158. Ono discloses this limitation for reasons similar to those I explained above for limitation 1(d). (See analysis in Section IX.A.2(e).)

g. Limitation 21(f): (b) a transmitter for transferring user selected arbitrary media content to the wireless communications network

159. Ono discloses this limitation for reasons similar to those I explained above for limitation 1(e). (See analysis in Section IX.A.2(f).)

- h. Limitation 21(g): (c) an input device configured to allow the user to carry out a user action on the input device that triggers transfer of said user selected arbitrary media content of said user processing device to said transmitter on the at least one peripheral device through said port, and from the transmitter to the wireless communications network to the base node of the wireless communications network for display on the first display, the input device being a physical actuator coupled to the at least one peripheral device**

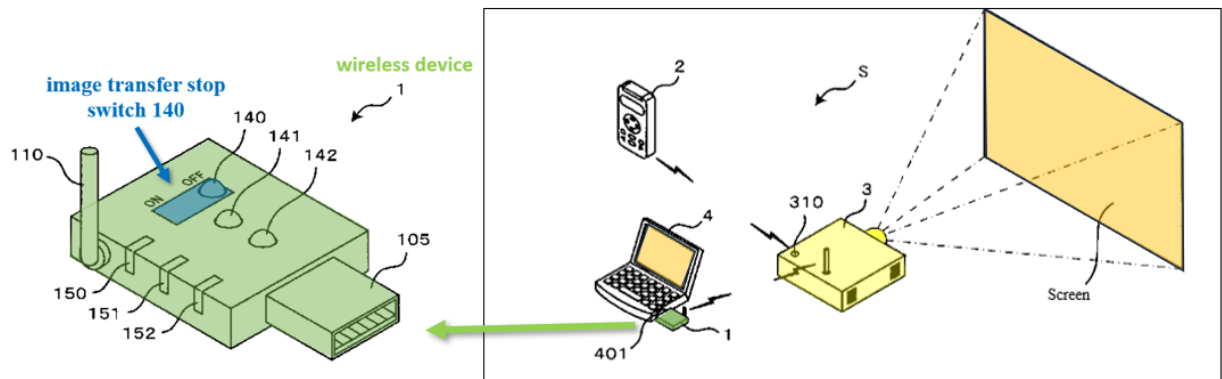
160. Ono discloses this limitation for reasons similar to those I explained above for limitation 1(f). (See analysis in Section IX.A.1, IX.A.2(a).)

B. Ground II – Uchida Alone or in Combination with Grimshaw Disclose and/or Suggest the Features of Claims 1-10 and 14-21

1. Rationale to Modify Uchida’s System

161. Uchida describes a wireless image projection system for wireless connecting individual computers to an image projector device. (*See, e.g.*, EX-1009, ¶¶0039-0052, 0153-0158, 0166, 0176, FIGS. 1-3, 17.) Such systems were known to be used in a variety of contexts, such as “small-scale presentations at conferences.” (EX-1009, ¶0003.) Uchida states that “[t]his type of presentation is made by placing a computer device in front of the presenter, transmitting image data corresponding to the image displayed on the display unit of the computer device ... from the computer device to an image projection device, and the image projection device then enlarges and projects an image based on the image data.” (*Id.*)

162. In the image projection system S (below), wireless device 1 functions as a wireless unit of computer device 4 and transmits image data via wireless communication to image projection device 3 that projects an image according to the image data received. (EX-1009, ¶0176, FIGS. 1, 3.)



(EX-1009, FIGS. 1, 3.)

Wireless device 1 is equipped with a USB connector 105 that connects to the computer device 4 and an image transfer stop switch 140. (EX-1009, ¶¶0070-0072.)

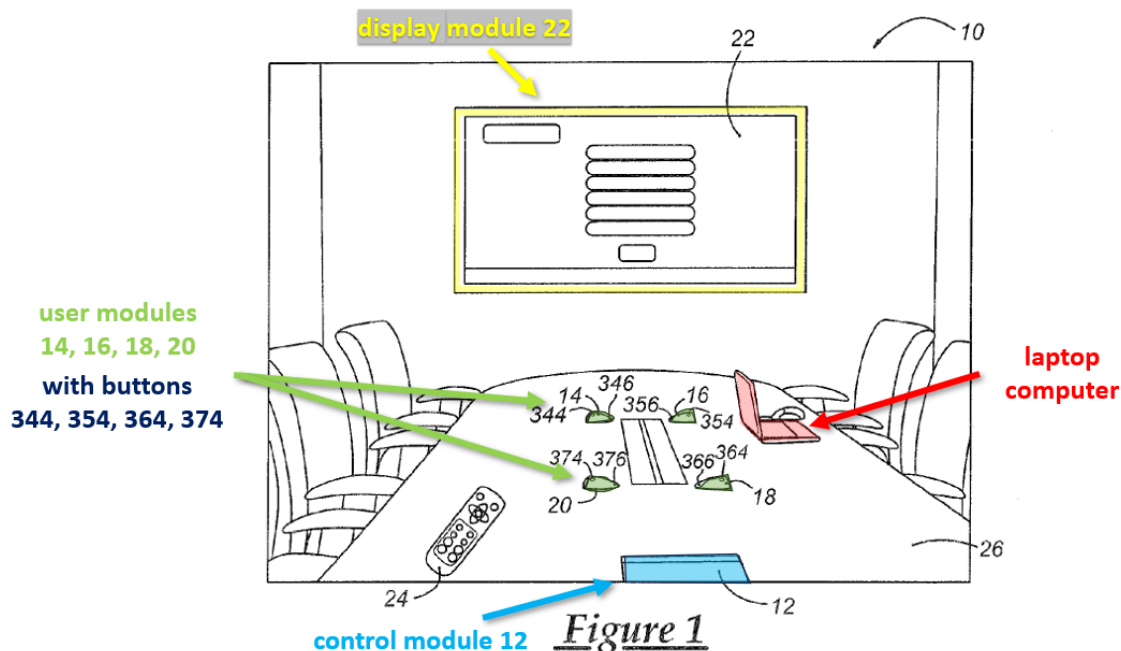
“The image transfer stop switch 140 is a slide switch that serves as an image transmission stop operation unit for instructing the image projection device 3 to stop transmitting the image data, and is a changeover switch that switches between an image stop ON mode and an image stop OFF mode.” (EX-1009, ¶0071.) When moved to the “ON” position, the image projector device will display a black screen. (EX-1009, ¶0071.) As discussed below, a POSITA would have understood that when moved back to the “OFF” position, images would again be sent and image display would resume. “When the image projection device 3 receives the display

image data transmitted in this manner, it projects an image based on the display image data onto a screen.” (EX-1009, ¶0158.)

163. And although Uchida contemplates multiple computers and wireless devices similarly connected to the image projection device, Uchida does not specifically address a scenario where multiple users are vying for control over the display to project images from their individual computers. (See, e.g., EX-1009, ¶¶0036-0037, 0058, 0112, (“[T]he same wireless setting information can be written to multiple wireless devices 1, thereby enabling wireless communication between multiple computer devices 4 and the image projection device 3.”), 0122, 0186; see also *id.*, ¶0012.) Grimshaw, however, specifically addresses such a scenario and provides suitable solutions.

164. Grimshaw (which is also discussed in Section VIII.D and XI.B) is directed to “a communication system that may provide a combination of audio, video, telephony, presentation and/or other conferencing functions.” (See, e.g., EX-1008, abstract, ¶0002; EX-1012, 1:4-7.) In particular, Grimshaw describes user modules that couple to laptop computers to allow transmission to a common display and thus is analogous to the arrangement in Uchida. Again, a POSITA would have also recognized that Grimshaw and was from the same field of endeavor as the ’951 patent and address similar problems of allowing user control over transmission of information. (See EX-1001, 1:17-22.) Thus, a POSITA looking to implement an

image display system like that of Uchida would have taken into account teachings like that of Grimshaw.



(Ex-1008, FIG. 1; EX-1012, FIGS. 1-3.)

165. Grimshaw discloses user modules 14, 16, 18, 20 can connect to each user's laptop around the table, for example, and—with the push of a button—allow the user to take control of a common display module 22 and display the contents of the user's laptop screen. (See, e.g., EX-1008, ¶¶0004, 0019 (EX-1012, 5:8-24), 0020 (EX-1012, 5:25-6:17).) For instance, Grimshaw states:

consider the case where separate laptop computers are connected to user modules 14-20 and are vying for control of the display module 22; that is, each of the connected computers is outputting data signals through data connections 342, 352, 362, 372 for presentation on display module 22. The display module 22 may not simultaneously display the

information from all four computers/user modules. Thus, the users of modules 14, 16, 18, 20 can take control of the display module 22 by respectively engaging buttons 344, 354, 364, 374, which causes switch controller 318 to pass the data signals from the selected user module on to the display module....

To explain, a user may engage or push a button 344, 354, 364, 374 on their user module in order to take control of display module 22 (e.g., display module 22 could show whatever is currently being displayed on the screen of the laptop computer connected to the selected user module). (EX-1008, ¶¶0019-0020 (EX-1012, 5:8-6:17).)

166. Thus, Grimshaw recognizes the desire for attendees at a meeting to have individual control over sharing the content of their individual laptop computer and present it on the shared display for the group and the means to do so, namely, by pushing a button on their individual user module to trigger transmission of the image data from the laptop to the display. (EX-1008, ¶¶0019-0020; EX-1012, 5:8-6:17; *see also* EX-1008, ¶¶0027-0028, FIGS. 1-3; EX-1012, 8:29-9:20, FIGS. 1-3.)

167. Accordingly, a POSITA guided by the teachings of Grimshaw would have been motivated to implement a wireless device (like that of Uchida) to include an input device, such as a physical actuator, that triggers transfer of user selected arbitrary media content from wireless device to the wireless communications network and to the image projection device through the wireless communications network for display, as recited in claims 1, 9, 16, and 21. Such a modification would

have been desirable to address the scenario where multiple users wish to takeover control of a shared display to present image data from their computer (*i.e.*, share their screen with the group).

168. As discussed below, Uchida's wireless device already provides much of this functionality in transferring image data from computer 4 to the image projection device 3 via a wireless network (specifically a LAN (Local Area Network)). Thus, any modification to Uchida's wireless device would have been relatively minor and straightforward. The control- takeover functionality described by Grimshaw could have been implemented in a number of ways, such by modifying Uchida's image transfer stop switch 140 or just by providing a separate button for the specific purpose of taking over control of the display. Thus, a POSITA would have had a reasonable expectation of success in achieving the claimed combination given the relatively simple modification to a wireless device like that of Uchida.

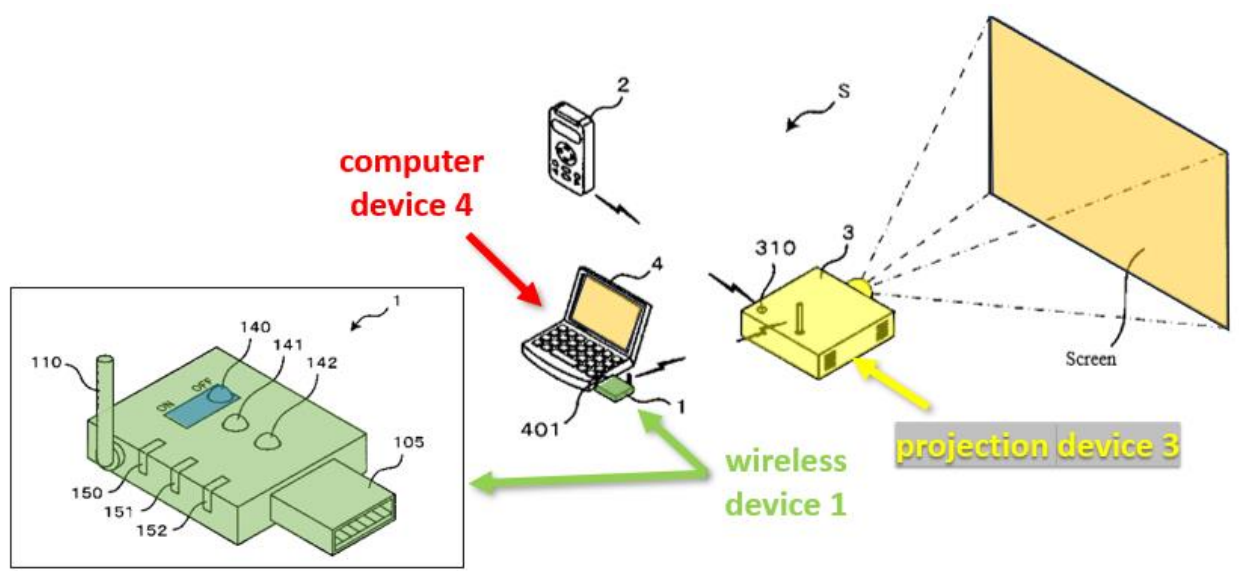
2. Claims 1 and 9

169. The teachings of Uchida alone or in combination with Grimshaw disclose and/or suggest all the limitations of claims 1 and 9. Again, I have been asked to assume the preamble of claim 1 is limiting for the purposes of my analysis. If the preamble is not limiting, it would not change my analysis for the limitations below.

a. Limitation 1(pre)/9(a): *An electronic meeting tool for communicating user selected arbitrary media content from users at a meeting comprising:*

170. Uchida discloses image projection system S (*e.g.*, “an electronic meeting tool”) for communicating display image data signals (*e.g.*, “user selected arbitrary media content”) from one or more of a user’s personal computer 4. (EX-1009, ¶¶0013 (describing “an image projection system including an image projection device having a wireless unit that receives image data transmitted by wireless communication from an external computer device and projects an image corresponding to the image data, and a remote control device that remotely controls the operation of the image projection device”), 0039-0059, 0153-0158, 0166, 0176, FIGS. 1-3, 14, 17, 18.) A POSITA would have readily understood that personal computers are capable of use by one participant in a meeting with a plurality of participants. (See EX-1009, ¶¶0003 (discussing prior art image projection systems “used in a variety of ways, from small-scale presentations at conferences to large-scale presentations where a large audience is gathered to present the results of one’s research. This type of presentation is made by placing a computer device in front of the presenter, transmitting image data corresponding to the image displayed on the display unit of the computer device via a cable from the computer device to an image projection device, and the image projection device then enlarges and projects an

image based on the image data.”), 0004-0009, 0012 (discussing “when an image projection device is shared among multiple groups”), 0036-0037, 0058, 0112, 0186.)



(EX-1009, FIGS. 1, 3.)

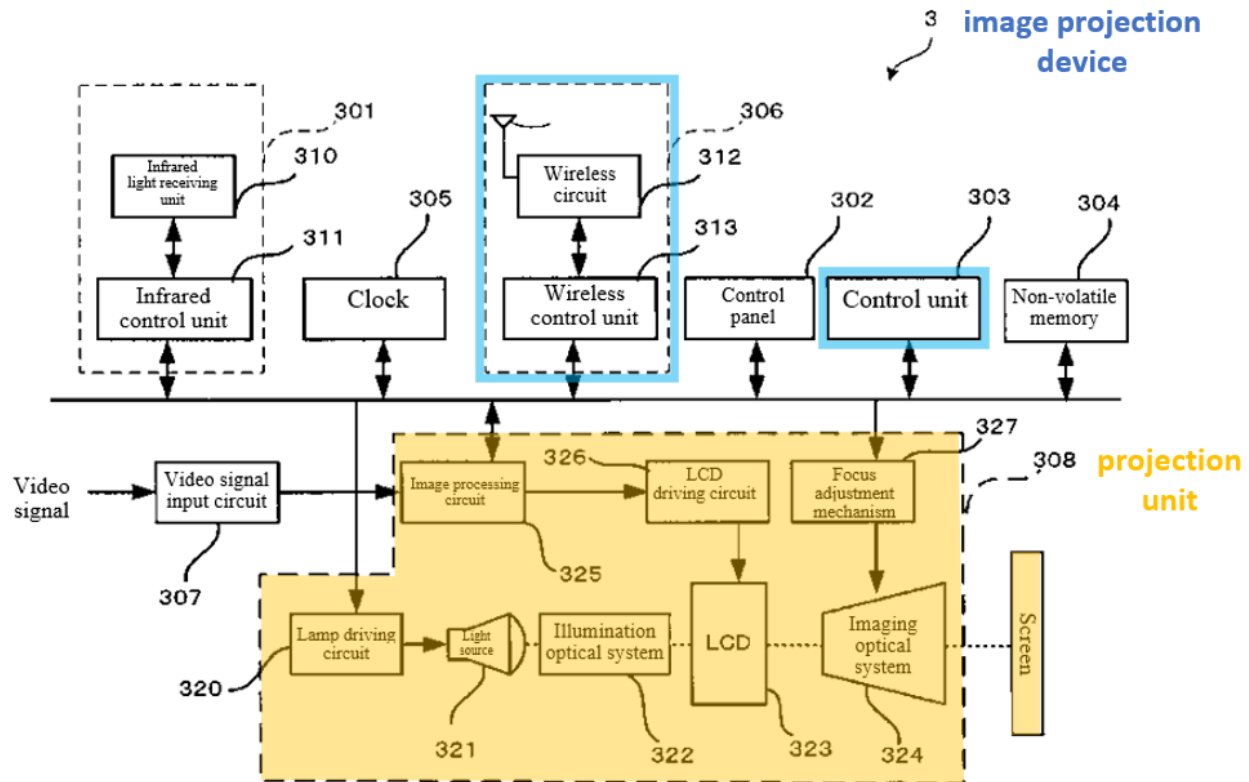
171. For similar reasons discussed regarding Ono, the content displayed on screen would have been considered “user selected arbitrary content” by a POSITA. Similar to Ono’s system, the user in the Uchida’s system has individual control over the content displayed on their own personal computer and has the capability to select their own screen for display on projection screen. (See Ex. 1009, ¶¶0039 (“As shown in FIG. 1, the image projection system S in this embodiment includes a wireless device 1 (corresponding to an example of a device), a remote control device 2 that can communicate with the wireless device 1 and remotely controls the operation of an image projection device 3 (described below), an image projection device 3 that projects an image on a screen according to image data input from the outside, and a

personal computer device 4 (hereinafter referred to as “computer device 4”) that transmits image data to the image projection device 3. The wireless device 1 is a USB dongle that functions as a wireless part of a computer device 4 and as a memory. ... [W]ireless device 1 functions as a wireless unit and transmits image data to the image projection device 3 via the wireless device 1. The image projection device 3 receives image data transmitted by wireless communication from the computer device 4 via the wireless device 1 and projects an image corresponding to the image data onto the screen.”), 0185 (“Next, the CPU 405 starts transmitting the image data corresponding to the screen (hereinafter referred to as the “display screen”) displayed on the LCD 403, which is the display unit of the computer device 4, to the image projection device 3 (step S304). In this process, the CPU 405 transmits display image data to the wireless device 1 via the USB connector 401, which then transmits the data from the wireless device 1 to the image projection device 3 via wireless communication. When the image projection device 3 receives the display image data transmitted in this manner, it projects an image based on the display image data onto a screen.”).) Thus, the user may generate, create or select any media content that is appropriate to display in accordance with the description of “user selected arbitrary content” provided by the ’951 patent. (Ex. 1001, 11:43–50.)

b. Limitation 1(a)/9(a): a base node, the base node being coupled to a first display, the base node being adapted to receive user selected arbitrary media content from at least one peripheral device via a wireless communications network, and to control display of the user selected arbitrary media content on the first display

172. Uchida discloses this limitation. For example, Uchida discloses a projection device 3, including control unit 303 and wireless unit 306, (*e.g.*, a “base node”) being coupled to LCD 323, projection unit 308, and screen (*e.g.*, a “first display”). (*See, e.g.*, EX-1009, ¶¶0040-0052, 0127, 0153-0158, 0166, 0176, FIGS. 1-3, 14, 17, 18.) The control unit 303 and wireless unit 306 of projection device 3 is adapted to receive display image data (*e.g.* “user selected arbitrary media content”) from a wireless USB device 1 (*e.g.* “at least one peripheral device”) via a wireless communications network (wireless LAN), and to control display of the image data on the image projection device. (*See, e.g.*, EX-1009, ¶¶0005-0006, 0039-0052 (“The computer device 4 connects the USB connector 105 (see FIG. 3) described below in the wireless device 1, so that the wireless device 1 functions as a wireless unit and transmits image data to the image projection device 3 via the wireless device 1. The image projection device 3 receives image data transmitted by wireless communication from the computer device 4 via the wireless device 1 and projects an image corresponding to the image data onto the screen. Here, the wireless device 1 and the image projection device 3 each have a wireless unit that complies with the wireless LAN standard so that the wireless communication between the wireless

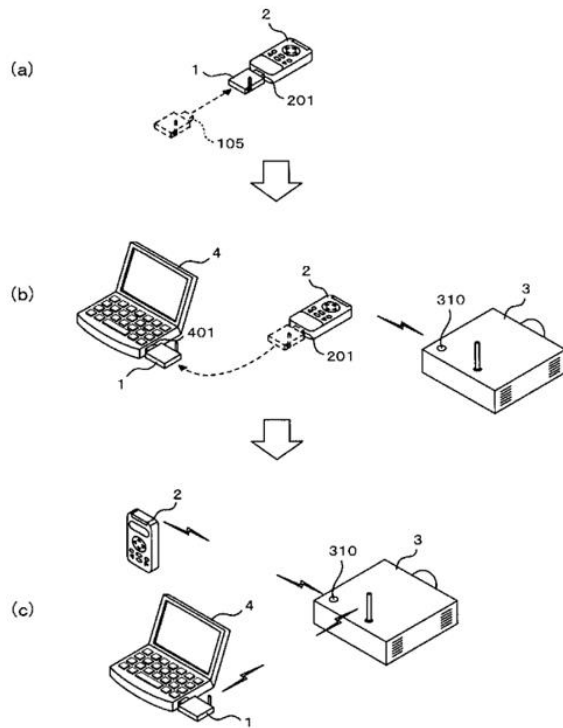
device 1 and the image projection device 3 can meet the wireless LAN (Local Area Network) standard such as IEEE802.11a/b/g.”), 0058 (“Incidentally, when transmitting image data from multiple computer devices 4 to an image projection device 3, it is necessary to write wireless setting information to multiple wireless devices 1.”), 0081 (“When the image transfer application is installed on the computer device 4, it causes the computer device 4 to function as an image transmission means that controls the wireless device 1 and transmits the image data from the computer device 4 to the image projection device 3.”), 0124-0127 (“The control unit 303 controls the wireless unit 306 to receive image data transmitted by wireless communication from the computer device 4, and projects an image corresponding to the received image data by the projection unit 308.”), 0153-0158, 0166-0167, 0176, FIGS. 1-3, 8, 14, 17, 18.) The control unit 303 is adapted to control display of the image data (“user selected arbitrary media content” on screen of the projection unit (“the first display”).



(EX-1009, FIG. 14.)

173. Uchida describes how wireless USB device 1 is first connected (*i.e.*, paired) to a remote control device 2 to receive wireless network settings matched to the image projection device 3. (EX-1009, ¶¶0040-0052, 0065-0069, FIGS. 2, 8.) When wireless device is then inserted into the USB port of computer device 4, “the wireless communication unit 107 communicates with the wireless unit of the image projection device 3 using settings based on the wireless setting information written from the remote control device 2.” (EX-1009, ¶0069.)

[FIG. 2]

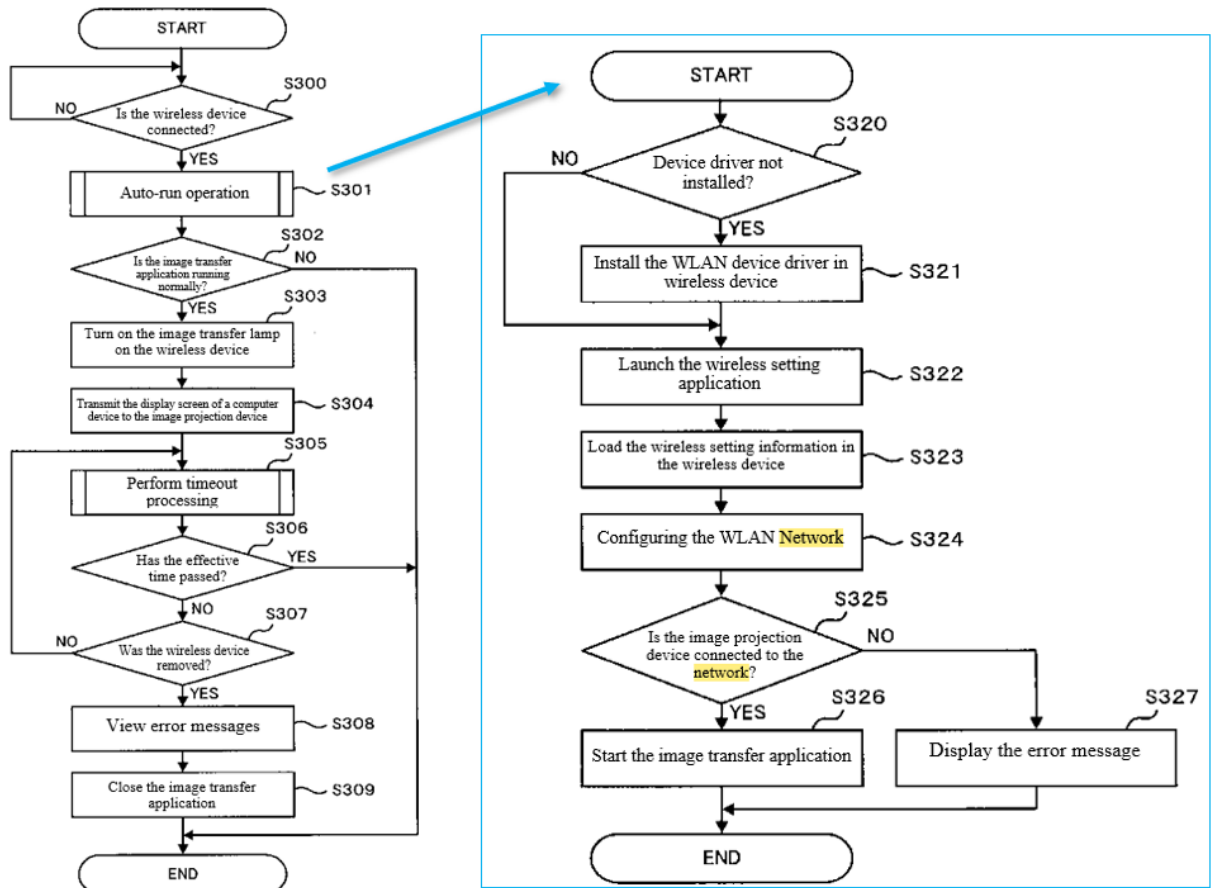


[FIG. 8]

Wireless setting information	
Band	IEEE802.11g
Network mode	Ad-hoc mode
Network name	Projector-net
Wireless channels	11
Authentication level	Open system
Encryption level	128 bits
Data encryption	WEP
Encryption key	ga54121...
IP address	192.168.0.1
Subnet mask	255.255.255.0
DNS	192.168.0.1
Effective time	2000.01.01 18:20
(Connection time	120 min)

(EX-1009, FIGS. 2, 8.)

After successful configuration of the network connection between wireless device 1 and image projection apparatus 3, computer device 4 transfers image data to the image projection apparatus 3 via wireless device 1 through the LAN. (EX-1009, ¶¶0039-0052, 0065, 0081, 0127, 0153-0158, 0166-0167, 0176, FIGS. 17-18.)



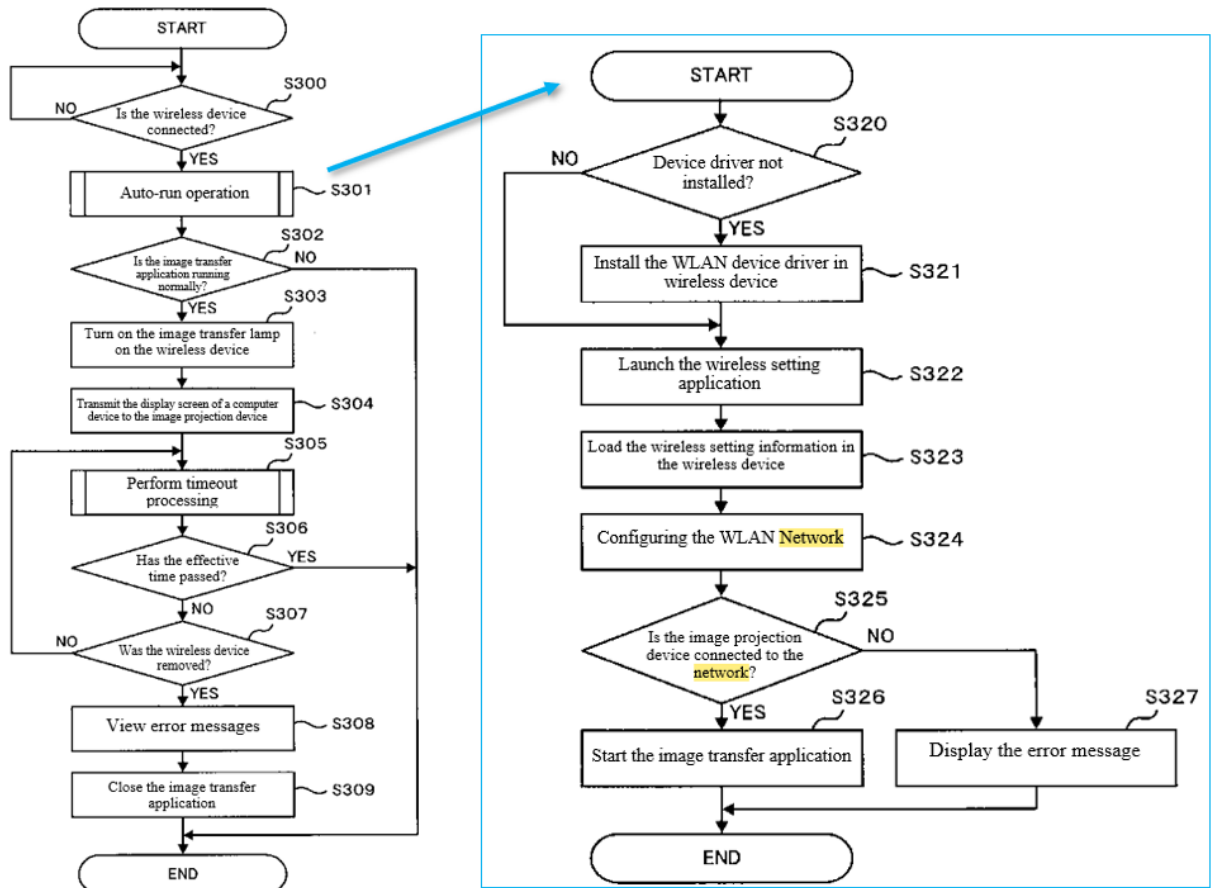
(EX-1009, FIGS. 17-18.)

c. Limitation 1(b)/9(b): the at least one peripheral device being adapted to communicate the user selected arbitrary media content to the wireless communications network

174. Uchida discloses this limitation as just discussed. Specifically, Uchida discloses that after the pairing process is completed wireless device 1 (e.g., the “peripheral device”) is configured to communicate image data (“user selected arbitrary media content”) to the wireless LAN. (EX-1009, ¶¶0039-0052, 0065-0069 (“When the USB connector 105 is connected to the computer device 4, the wireless communication unit 107 communicates with the wireless unit of the image

projection device 3 using settings based on the wireless setting information written from the remote control device 2. Here, the wireless setting information written from the remote control device 2 is first read into the computer device 4, and the wireless setting information thus read is then transmitted from the computer device 4 to the wireless device 1, causing the wireless communication unit 107 to perform wireless communication according to the wireless setting information.”), 0081, 00154-0168, 0176, FIGS. 2, 8, 17, 18.)

175. For example, Uchida states that once the computer device 4 and image projection device 3 are connected via a LAN, “CPU 405 [of computer device 4] starts transmitting the image data corresponding to the screen (hereinafter referred to as the “display screen”) displayed on the LCD 403, which is the display unit of the computer device 4, to the image projection device 3 (step S304).” (EX-1009, ¶0158.) “In this process, the CPU 405 transmits display image data to the wireless device 1 via the USB connector 401, which then transmits the data from the wireless device 1 to the image projection device 3 via wireless communication” (*id.*), which is a wireless local area network connection (WLAN).



(EX-1009, FIGS. 17-18.)

d. Limitation 1(c)/9(c): wherein the at least one peripheral device is a connection unit comprising:

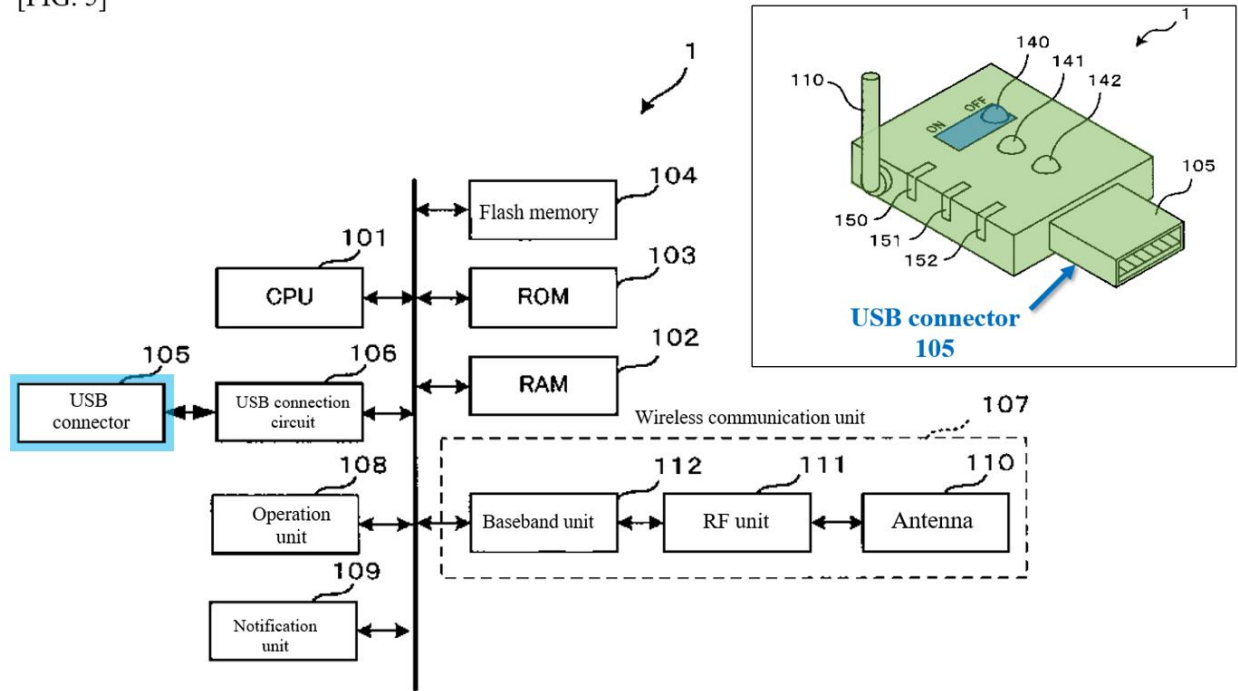
176. Uchida discloses this limitation. For example, Uchida discloses wireless device 1 (e.g., the “peripheral device”) configures the WLAN to connect computer device 4 to a LAN and is thus functions as a “connection unit.” (See, e.g., EX-1009, ¶¶0039-0052, 0065-0069, 0166-0167 (“The CPU 405 then configures the WLAN (Wireless LAN) network by executing the wireless configuration application (step S324). This network setting is performed for wireless device 1. That is, the CPU 405 transmits the wireless setting information to the wireless device 1 via the

USB connector 401, and the wireless device 1 configures the WLAN network according to this wireless setting information. WLAN network settings include IP network settings such as IP address, subnet mask, and DNS IP address for LAN communication, as well as settings of information necessary for wireless communication such as network name and encryption key.”), 0176.)

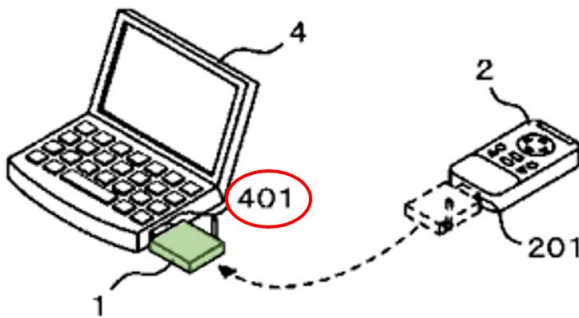
e. Limitation 1(d)/9(d): *the at least one peripheral device ... comprising (a) a connector adapted to couple to a port of a user processing device, the user processing device having a second display and a memory*

177. Uchida disclose this limitation. For example, Uchida teaches the use of a wireless device 1 having a USB connector 105 that plugs into a USB connector 401 (e.g., a “port”) of the user’s laptop as a means of connection. (EX-1009, ¶¶0039 (“The computer device 4 connects the USB connector 105 (see FIG. 3) described below in the wireless device 1, so that the wireless device 1 functions as a wireless unit and transmits image data to the image projection device 3 via the wireless device 1.”), 0047, 0048 (“USB connector 105 of the wireless device 1 is connected to the USB connector 401.”), 0066 (“The USB connector 105 is a general purpose USB connector and can be connected to the USB connectors 201, 401 of the remote control device 2 and the computer device 4.”), 0077, 0148, 150, FIGS. 2, 3, 5, 16.)

[FIG. 5]



(EX-1009, FIGS. 3, 5.)



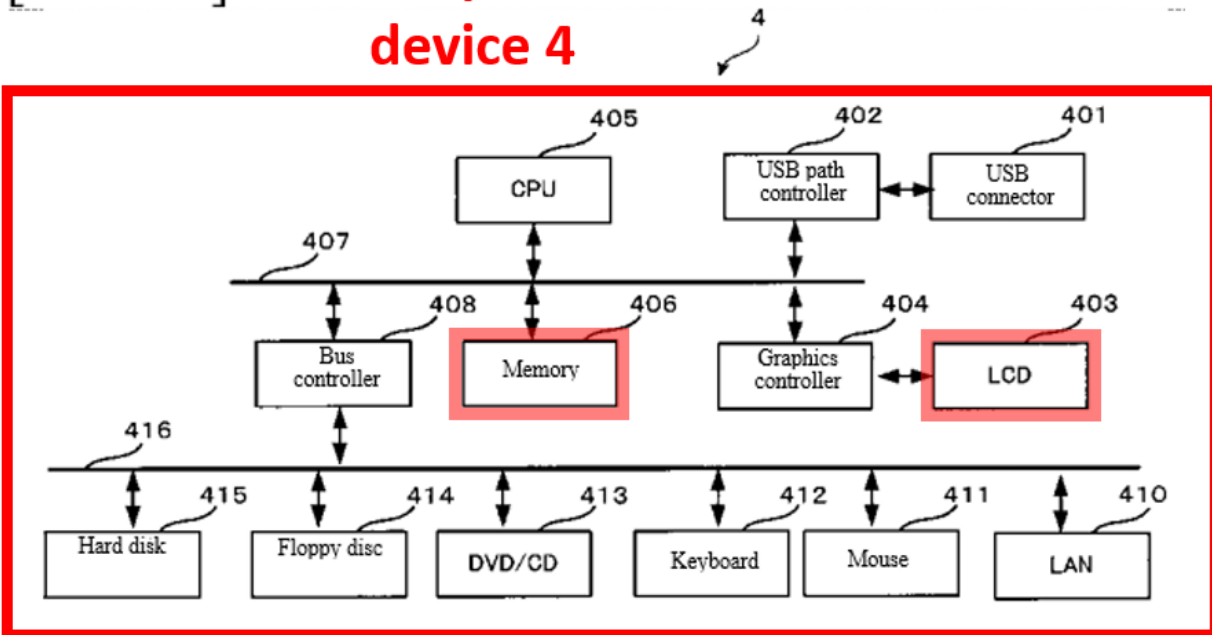
(EX-1009, FIG. 2.)

178. Uchida also discloses that computer device 4 (*e.g.*, “the user processing device”) includes LCD 403 (*e.g.*, “a second display”) and a memory (406). (EX-1009, ¶0148 (“As shown in FIG. 16, the computer device 4 includes a USB connector 401, a USB bus controller 402, an LCD 403 as a display unit, a graphics controller 404 that performs processing for displaying on the LCD 403, a CPU 405

that controls the entire computer device 4, a memory 406 that stores the programs and various parameters, and a first bus 407 that connects these together”).)

[FIG. 16]

Computer device 4



(EX-1009, FIG. 16.)

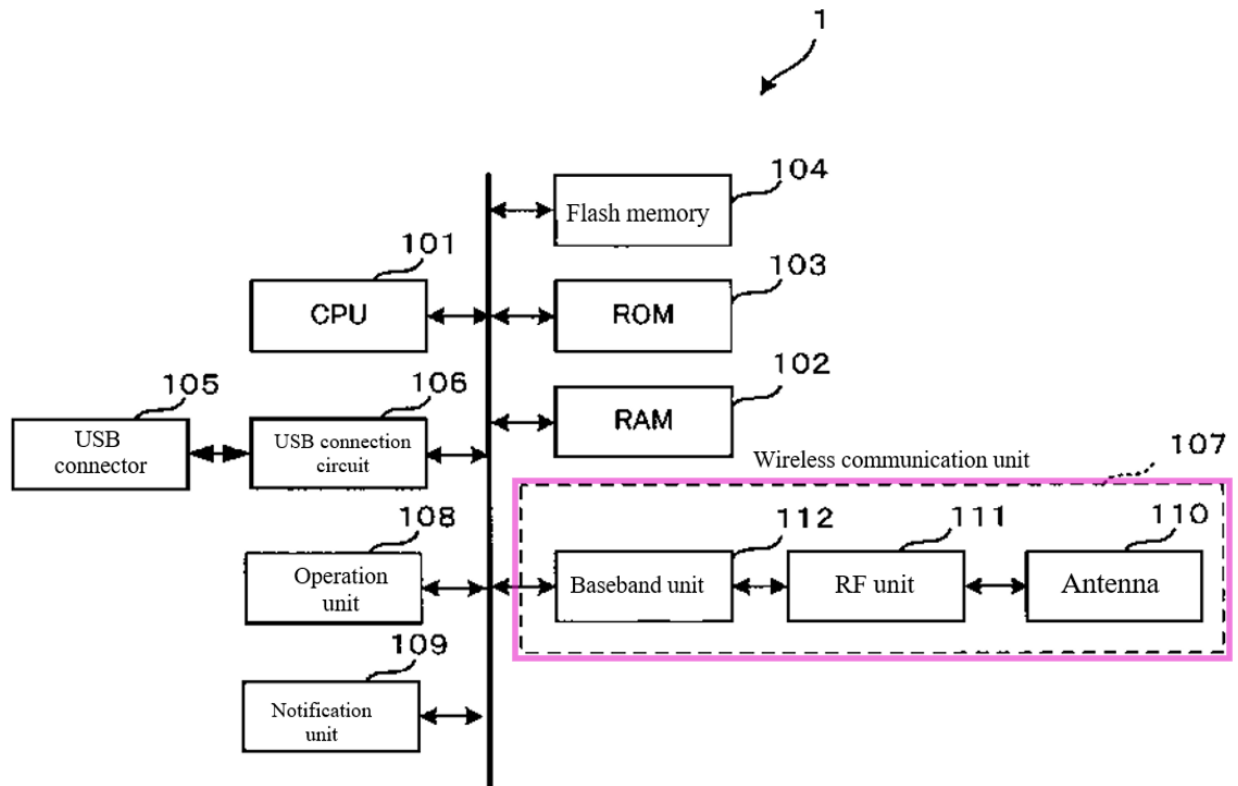
f. Limitation 1(e)/9(e): (b) a transmitter for transferring user selected arbitrary media content to the wireless communications network

179. Uchida discloses this limitation. Uchida discloses, for example, a wireless device 1 (e.g., “the peripheral device”) includes a wireless communication unit 107 (e.g., a “transmitter”) for transferring image data (e.g., “user selected arbitrary media content”) to the wireless communications network. (See, e.g., EX-1009, ¶¶0061-0069, 0154-0168, 0176 (“As described above, in the image projection system S of this embodiment, the wireless device 1 has a wireless unit [107] and

functions as a wireless unit of a computer device 4 that transmits image data via wireless communication to an image projection device 3 that projects an image according to the image data received by the wireless unit 306. This wireless device 1 is equipped with a USB connector 105 that can be connected to both the image projection device 3 and the computer device 4, a flash memory 104 to which the wireless setting information (wireless communication setting information) can be written from the image projection device 3 when the USB connector 105 is connected to the image projection device 3, and which allows the computer device 4 to read the wireless setting information written from the image projection device 3 when the USB connector 105 is connected to the computer device 4, and a wireless communication unit 107 that communicates with the wireless unit 306 of the image projection device 3 using settings based on the wireless setting information written from the image projection device 3 when the USB connector 105 is connected to the computer device 4.”), FIG. 5.) Uchida discloses that the wireless communication unit 107 has an antenna 110, a radio frequency (RF) unit 111, and a baseband unit 112, “and is capable of transmitting and receiving data based on the wireless LAN standard.” (EX-1009, ¶0068.) An antenna, RF unit, and baseband unit are indicative of the structure and function of a wireless transmitter, which involves controlled modulation and output of electromagnetic radiation, such as radio waves. (See, e.g., EX-1007, ¶¶0020-0023; EX-1024, ¶0028, FIG. 3; EX-1027, ¶¶0017-0018, FIG. 4.)

Thus, a POSITA would have understood wireless communications unit 107 to be a “transmitter,” as claimed.

[FIG. 5]



(EX-1009, FIG. 5.)

- g. Limitation 1(f): (c) an input device configured to allow the user to carry out a user action on the input device that triggers transfer of said user selected arbitrary media content from the transmitter to the wireless communications network and to the base node through the wireless communications network for display on the first display, the input device being a physical actuator coupled to the at least one peripheral device**

Limitation 9(f) - an input device configured to allow the user to carry out a user action on the input device that triggers transfer of said user selected arbitrary media content from the transmitter to the wireless communications network and via the wireless communication network to the base node for display on the first display

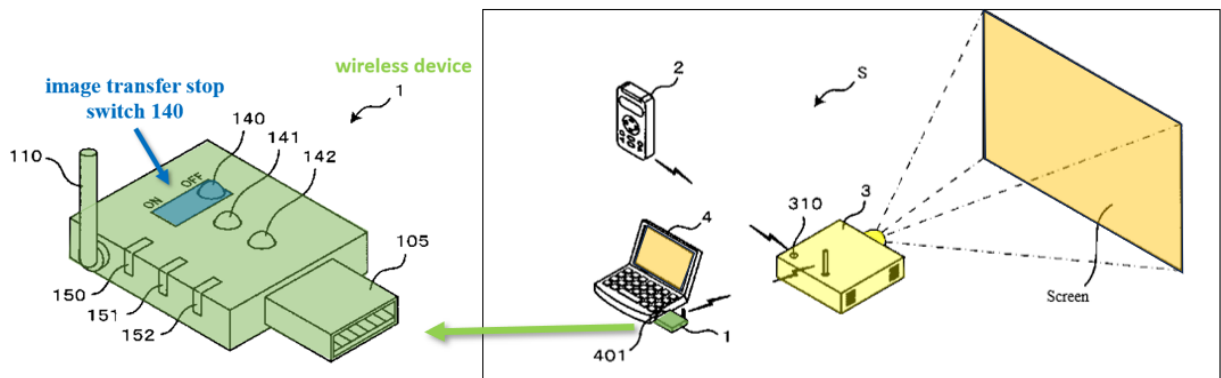
180. The Uchida alone or in combination with Grimshaw discloses and/or suggests this limitation. For example, Uchida discloses a wireless device 1 (in the form of a USB dongle) (e.g., “the peripheral device”) for sending content (image data) from a personal computer to a projector 3 for display of the content. (EX-1009, ¶¶0010-0013, 0039-0040, 0176.) Included on the wireless device 1 is a slidable switch (image transfer stop switch 140) (e.g., an “input device”), which allows the user to temporarily stop transmission of the image data when the user no longer wishes to have their content displayed by positioning the slider in the “ON” image stop position. (EX-1009, ¶¶0070-0072.)

The image transfer stop switch 140 is a slide switch that serves as an image transmission stop operation unit for instructing the image projection device 3 to stop transmitting the image data, and is a changeover switch that switches between an image stop ON mode and

an image stop OFF mode. When the image transfer stop switch 140 is operated to the image stop ON mode side while connected to the computer device 4 via the USB connector 105, the CPU 101 notifies the computer device 4 of this information. When the CPU 405 of the computer device 4 receives the information, it executes an image transfer application and transmits a request to the image projection device 3 via the wireless communication unit 107 to project a specific image (here, a black screen image) on the image projection device 3.

When the image transfer stop switch 140 is operated to the image stop ON mode side while connected to the computer device 4 via the USB connector 105, the CPU 101 may transmit a request to the image projection device 3 via the wireless communication unit 107 to project a specific image, *without transmitting data input from the computer device 4 to the image projection device 3.* (EX-1009, ¶¶0071-0072.)

A POSITA would have also appreciated that if the slide switch is moved to the opposite “OFF” position, transmission of image data may resume (thus triggered). Otherwise there would be no need for a slidable switch to toggle between two different states.



(EX-1009, FIGS. 1, 3.)

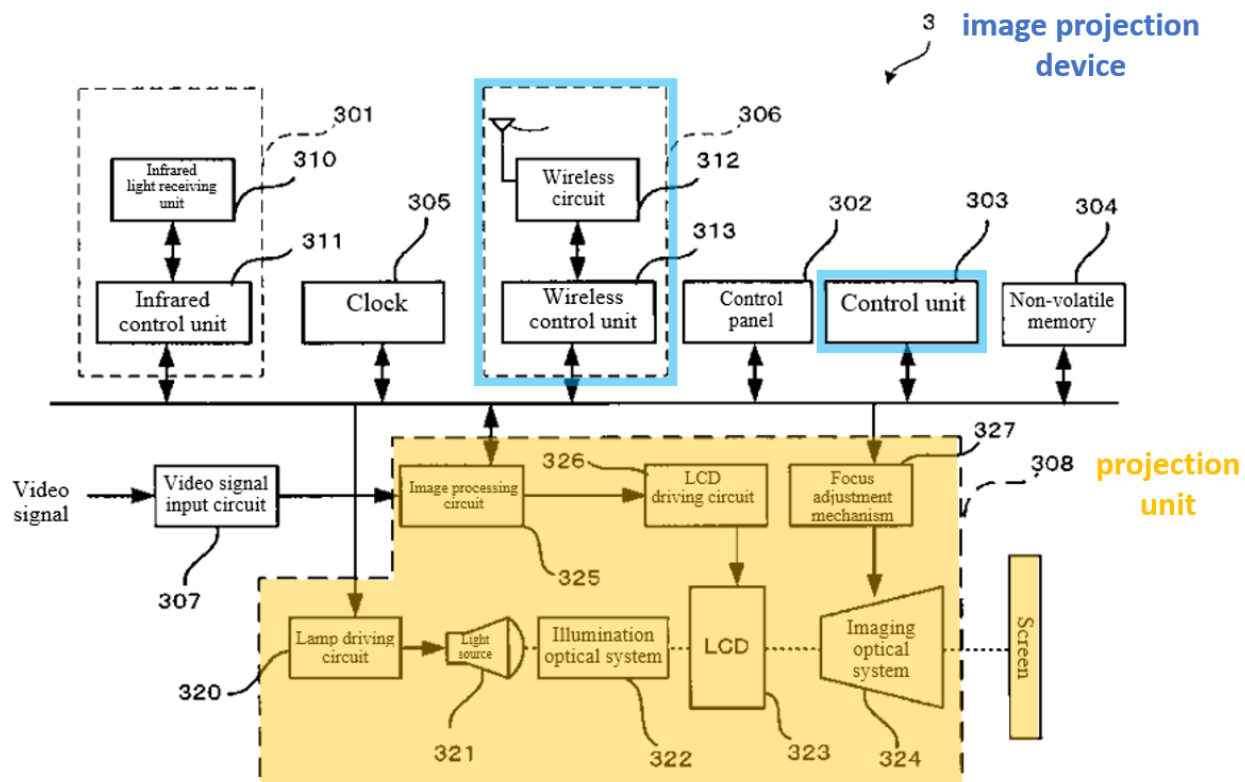
181. Thus, Uchida teaches an image transfer stop switch 140 (a “physical actuator”) coupled to wireless device 1 (“the at least one peripheral device) and configured to allow the user to slide the switch to an “ON” and “OFF” position (“carry out a user action”) that triggers transfer of image data (“user selected arbitrary media content”) from wireless communication unit 107 (*e.g.*, the “transmitter”) to the wireless communications network (LAN) and to control unit 303 and wireless unit 306, (*e.g.*, a “base node”) through the wireless communications network for display on the LCD 323 of the image projection unit (*e.g.*, a “first display”). (EX-1009, ¶¶0134, 0139 (“[T]he control unit 303 operates the wireless unit 306 to enable wireless communication with the computer device 4. Thereafter, when the control unit 303 receives image data from the computer device 4 via the wireless unit 306, until the operation of the wireless unit 306 is stopped, it controls the projection unit 308 to project an image corresponding to the received image data onto a screen (projection surface)”), 0176.)

182. Further, as discussed in the previous subsection, the combination of Uchida and Grimshaw also suggests this limitation. (See Section IX.B.1.)

3. Claims 2, 10, and 17 - *said base node is integrated in the first display*

183. Uchida discloses and/or suggests this limitation. For example, Uchida discloses a control unit 303 (a processing unit) and that controls image projector 3

and several other components, such as a wireless unit 306 to receive wirelessly sent data, all of which are built into one housing. (See, *e.g.*, EX-1009, ¶0124 (“As shown in FIG. 14, the image projection device 3 includes ... a control unit 303 that controls the entire image projection device 3, ... a wireless unit 306 that performs wireless communication conforming to the wireless LAN standard, a video signal input circuit 307 that inputs a video signal from the outside, and a projection unit 308 that projects an image based on the video signal input via the video signal input circuit 307 or image data received via the wireless unit 306, all of which are built into the housing”), FIG. 14.) Thus, a POSITA would have understood to disclose a control unit/wireless unit and integrated display.



(EX-1009, FIG. 14.)

4. ***Claim 3 - a program adapted to be loaded onto the user processing device and to run on an operating system of the user processing device, said program being adapted to obtain said user selected arbitrary media content from the user processing device***

Claim 18 - the step of loading a program onto the user processing device and running the program on the operating system of the user processing device to obtain user selected arbitrary media content

184. Uchida discloses this limitation. For example, Uchida describes one way in which to implement such screen mirroring. Specifically, Uchida discloses an image transfer program adapted to be loaded onto computer device 4 and to run on an operating system of the computer, with the program being adapted to obtain image data from the computer. (See, e.g., EX-1009, ¶¶0048 (“When the USB connector 105 of the wireless device 1 is connected to the USB connector 401 of the computer device 4, the computer device 4 installs a ... an image transfer application program (hereinafter abbreviated as ‘image transfer application’) stored in the program storage unit of the wireless device 1.”), 0052 (“[I]mage data is sent from the computer device 4 to the image projection device 3 via the wireless device 1 by executing an image transfer application on the computer device 4, and the image projection device 3 projects an image based on the image data onto a screen.”), 0080-0081, 0151-0152, 0167, 0169.)

5. ***Claim 4: The electronic meeting tool of claim 1, wherein the at least one peripheral device is a plug-and-play device***

185. Uchida discloses this limitation. A POSITA would have appreciated that Uchida's wireless device 1 is advantageously a plug-and-play USB device. For example, Uchida discloses when the wireless device 1 is plugged into computer 4, "the CPU 405 of the computer device 4 determines whether or not the wireless device 1 is connected ... and when a USB device is connected, it is further determined whether this USB device has specific identification information." (EX-1009, 0154; *see also id.*, ¶¶0150-0168, FIGS. 17 & 18.) Uchida further discloses that if it is determined that wireless device 1 has been inserted, the CPU 405 will recognize the device as a CD-ROM (*i.e.*, a mass storage device and "starts the auto-run operation process." (*Id.*) A POSITA would have understood Uchida's description of wireless device 1 to be consistent with the description of a play-and-play device in the '951 patent (*see* EX-1001, 9:46-59) and the use of USB devices as known in the art (*e.g.*, EX-1021, ¶¶0003-0004, 0061-0067; EX-1029, ¶¶0009-0010).

6. ***Claim 5: The electronic meeting tool of claim 1, wherein the electronic meeting tool is configured to present the at least one peripheral device to the user processing device as a human interface device via a pre-installed generic driver which is a human interface device driver, or***

to present the at least one peripheral device to the user processing device as a mass storage device via a pre-installed generic driver which is a mass storage device driver, or

to present the at least one peripheral device to the user processing device as a composite device via pre-installed

generic drivers which drive different device interfaces independently

186. Uchida discloses this limitation. For example, as discussed regarding claim 4, Uchida discloses that the wireless device 1 will be recognized as a CD-ROM (*i.e.*, a mass storage device) by the operating system when plugged into the computer 4. (*See, e.g.*, EX-1009, ¶¶0078-0083, 0150-0168, FIGS. 6, 7, 17, 18; *see also* EX-1021, ¶¶0003-0004, 0061-0067; EX-1029, ¶¶0009-0010.) A POSITA would have understood this to be done via a “pre-installed generic driver,” such as a standard USB mass storage driver on a Windows operating system. (*Id.*; *see also* EX-1001, 12:10-24 (describing a “pre-installed generic driver”); EX-1030, ¶¶0009-0011 (describing, for example, a mass storage device driver as “pre-installed generic driver”).) A POSITA would have understood Uchida’s plug-and-play technique discussed above also includes presenting the wireless device as a mass storage device to take advantage of drivers installed with the operating system which recognize such devices.

7. Claim 6: The electronic meeting tool according to claim 1, wherein at least one channel is formed between the transmitter of the at least one peripheral device over the wireless communications network to the base node that is independent from the networking capability of the user processing device

187. Uchida discloses this limitation. For example, Uchida discloses a dedicated wireless channel is formed between the wireless communication unit 107 of the wireless device 1 over the wireless communications network to the wireless

unit 306 of the image projection device 3. (See, e.g., EX-1009, ¶¶0041-0042, 0065 (“Here, the wireless setting information includes the wireless LAN standard type (band), network mode, network name (ESSID), wireless channel...”), 0068, 0090, 0106, 0124, 0149, 0176, FIG. 8 (listing 11 potential channels).) A POSITA would have understood that the wireless channel used by the wireless device is independent from the networking capability of the computer device, which has a separate LAN interface 410.

[FIG. 8]

Wireless setting information	
Band	IEEE802.11g
Network mode	Ad-hoc mode
Network name	Projector-net
Wireless channels	11
Authentication level	Open system
Encryption level	128 bits
Data encryption	WEP
Encryption key	ga54121...
IP address	192.168.0.1
Subnet mask	255.255.255.0
DNS	192.168.0.1
Effective time	2000.01.01 18:20
(Connection time	120 min)

(EX-1009, FIG. 8.)

8. **Claim 7: *The electronic meeting tool according to claim 1, wherein the at least one peripheral device is configured to encode, compress, and/or encrypt the user selected arbitrary media content when transmitting the user selected arbitrary media content from the transmitter to the base node of the wireless communications network***

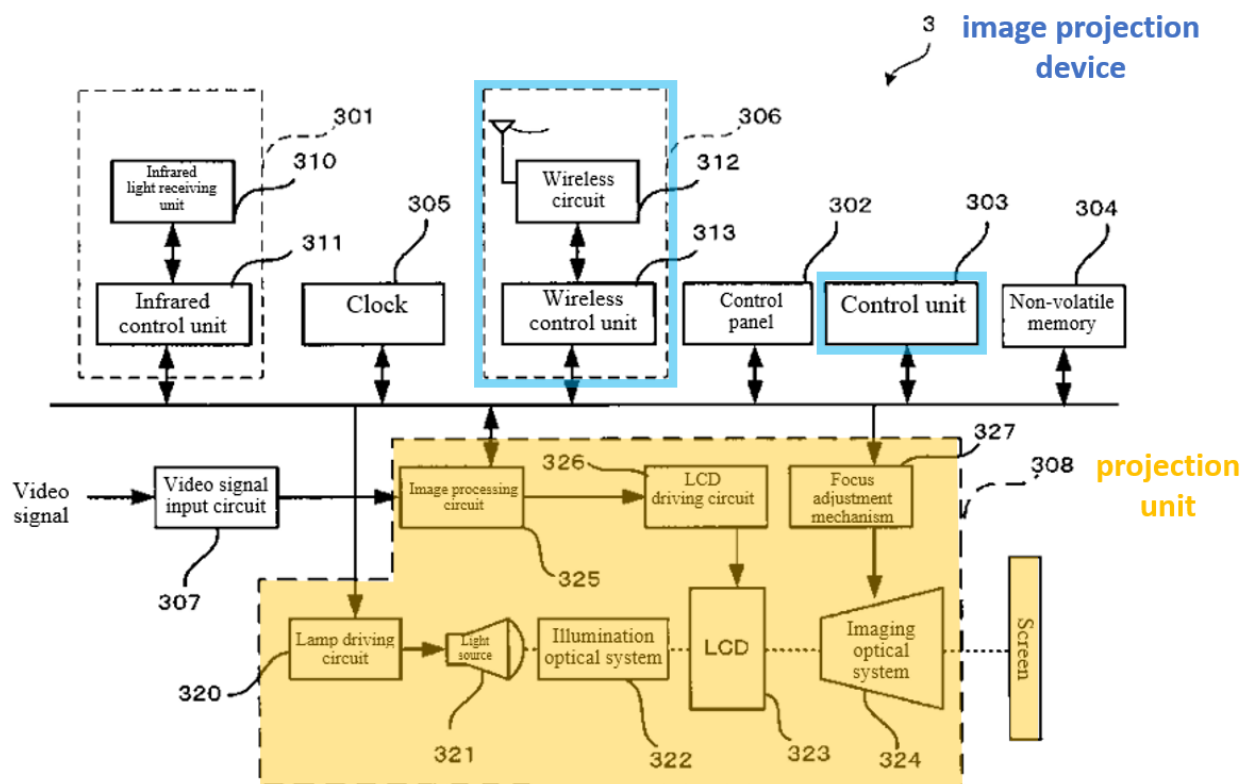
188. Uchida discloses and/or suggests this limitation. For example, Uchida’s wireless communication technique encrypts data using, for example, a

WEP (Wired Equipment Privacy) key. (See, e.g., EX-1009, ¶¶0011, 0041-0042, 0056-0059, 0065 (“Here, the wireless setting information includes the wireless LAN standard type (band), network mode, network name (ESSID), wireless channel, authentication level, encryption level, data encryption method, encryption key, IP address, subnet mask, DNS address, effective period, etc., as shown in FIG. 8.”), 0090, 0105-0106, 0111-0112, FIGS. 2, 8 (listing a 128-bit encryption level).)

9. Claims 8 and 15: *the first display has a processing unit and the base node is integrated into the processing unit*

189. Uchida discloses the limitation of claim 8 for reasons similar to those I explained above for claim 2. (See analysis in Section IX.B.3.) For example, Uchida discloses image projector 3 (“first display”) including a control unit 303 (with CPU) (which also forms at least part of a “base node”) that controls the entire image projection device 3, such as a wireless unit 306 to receive wirelessly sent data, all of which are built into one housing. (See, e.g., EX-1009, ¶¶0124 (“As shown in FIG. 14, the image projection device 3 includes ... a control unit 303 that controls the entire image projection device 3, ... a wireless unit 306 that performs wireless communication conforming to the wireless LAN standard, a video signal input circuit 307 that inputs a video signal from the outside, and a projection unit 308 that projects an image based on ... image data received via the wireless unit 306, all of which are built into the housing”), 0127 (“The control unit 303 has a built-in CPU, ROM, RAM, etc., and functions as a control unit by the CPU reading and executing

a program pre-stored in the ROM.... The control unit 303 controls the wireless unit 306 to receive image data transmitted by wireless communication from the computer device 4, and projects an image corresponding to the received image data by the projection unit 308.”) FIG. 14.) Thus, a POSITA would have understood Uchida to disclose an image projection device 3 having a CPU (“processing unit”) and a control unit 303 (e.g., “base node”) is integrated into the processing unit.



(EX-1009, FIG. 14.)

10. Claim 14: The electronic meeting tool according to claim 9, wherein the at least one peripheral device further comprises an optical indicator for providing a visual indication of changes in state of the at least one peripheral device including when the user selected arbitrary media content is being transmitted by the at least one peripheral device

190. Uchida discloses this limitation. For example, Uchida discloses wireless device 1 (“the at least one peripheral device”) includes image transfer lamp 151 (“an optical indicator”) flashes when image data is being sent from the computer device 4 to the image projection device 3, thus providing a visual indication of changes in state of the wireless device 1 including when image data (“the user selected arbitrary media content”) is being transmitted by the wireless device. (EX-1009, ¶¶0075 (“when image data is being sent from the computer device 4 to the image projection device 3, the image transfer lamp 151 flashes”), 0155-0158 (“In step S303 , the CPU 405 issues a request via the USB connector 401 to turn on the image transfer lamp 151 of the wireless device 1. Upon receiving this lighting request, the CPU 101 of the wireless device 1 lights the image transfer lamp 151.”), FIGS. 3, 18.)

11. Claim 16

191. The teachings of Uchida alone or in combination with Grimshaw disclose and/or suggest all the limitations of claim 16.

a. Limitation 16(pre): A method for communicating arbitrary media content from users at a meeting comprising:

192. Uchida discloses this limitation for reasons similar to those I explained above for limitation 1(pre). (See analysis in Section IX.B.2(a).)

b. Limitation 16(a): operating a first display, wherein the first display is coupled to a base node

193. Uchida discloses this limitation. For example, as discussed regarding claim 1, Uchida discloses control unit 303 and wireless unit 306 (*e.g.*, a “base node”) being coupled to LCD 323, projection unit 308, and screen of image projection device 3 (*e.g.*, a “first display”). (See, *e.g.*, EX-1009, ¶¶0039-0052, 0127, 0153-0158, 0166, 0176, FIGS. 1-3, 14, 17, 18.) Uchida also describes operating the image projection device 3. (See, *e.g.*, EX-1009, ¶¶0134 (“The LCD 323 is driven by the LCD drive circuit 326 and displays images on its display surface. The image displayed in this way is emitted as light from the LCD 323 by illumination light from the illumination optical system 322. This emitted light then passes through the imaging optics 324 and the projection opening in the housing, and is projected onto a screen (projection surface). In this way, the image displayed on the LCD 323 is configured to be projected onto the screen.”), 0139 (“[T]he control unit 303 operates the wireless unit 306 to enable wireless communication with the computer device 4. Thereafter, when the control unit 303 receives image data from the computer device 4 via the wireless unit 306, until the operation of the wireless unit 306 is stopped, it

controls the projection unit 308 to project an image corresponding to the received image data onto a screen (projection surface)”), 0176.)

c. Limitation 16(b): *the base node being adapted to receive user selected arbitrary media content from a peripheral device via a wireless communications network and to control display of the user selected arbitrary media content on the first display*

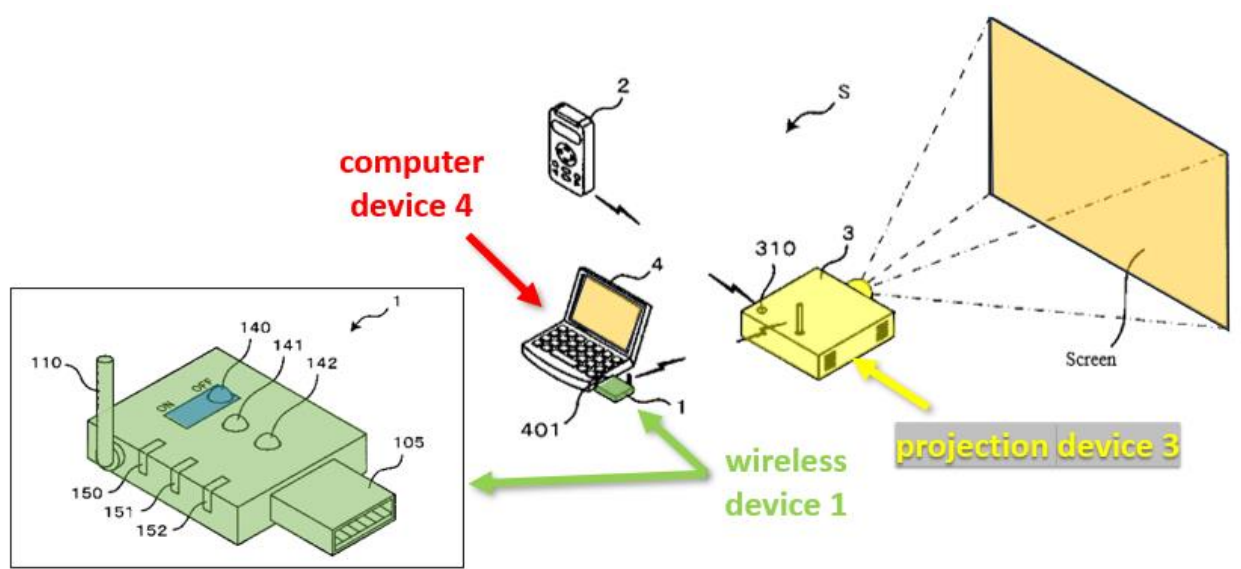
194. Uchida discloses this limitation. For example, Uchida discloses a control unit 303 and wireless unit 306 (*e.g.*, a “base node”) being adapted to receive image data (*e.g.*, “user selected arbitrary media content”) from wireless device 1 (*e.g.*, a “peripheral device”) via a wireless communications network. (See my discussion regarding claim 1.) Uchida further discloses that control unit 303 controls display of the image data on the LCD 323 and the screen. (See, *e.g.*, EX-1009, ¶¶0134 (“The LCD 323 is driven by the LCD drive circuit 326 and displays images on its display surface. The image displayed in this way is emitted as light from the LCD 323 by illumination light from the illumination optical system 322. This emitted light then passes through the imaging optics 324 and the projection opening in the housing, and is projected onto a screen (projection surface). In this way, the image displayed on the LCD 323 is configured to be projected onto the screen.”), 0139 (“[T]he control unit 303 operates the wireless unit 306 to enable wireless communication with the computer device 4. Thereafter, when the control unit 303 receives image data from the computer device 4 via the wireless unit 306, until the

operation of the wireless unit 306 is stopped, it controls the projection unit 308 to project an image corresponding to the received image data onto a screen (projection surface)'), 0176.)

d. Limitation 16(c): *connecting the peripheral device to a port of a user processing device and communicating the user selected arbitrary media content to the wireless communications network*

195. Uchida discloses this limitation. For example, Uchida discloses connecting the wireless device 1 (e.g., a “peripheral device”) to a USB connector 401 (e.g., a “port”) of computer 4 (e.g., a “user processing device”) and communicating the image data (e.g., “user selected arbitrary media content”) to the wireless communications network. (EX-1009, ¶¶0039 (“The computer device 4 connects the USB connector 105 (see FIG. 3) described below in the wireless device 1, so that the wireless device 1 functions as a wireless unit and transmits image data to the image projection device 3 via the wireless device 1.”), 0047-0048 (“USB connector 105 of the wireless device 1 is connected to the USB connector 401 of the computer device 4.”), 0077, 0124 (“The control unit 303 controls the wireless unit 306 to receive image data transmitted by wireless communication from the computer device 4.”), 0158 (“In this process, the CPU 405 transmits display image data to the wireless device 1 via the USB connector 401, which then transmits the data from the wireless device 1 to the image projection device 3 via wireless communication.”), 0166-0167 (“[I]f it is determined that a network connection with the image

projection device 3 has been established (step S325: YES), the CPU 405 launches an image transfer application”), 0176, FIGS. 1-3, 8, 14, 17-18.) (See also my discussion regarding claim 1 in Sections IX.B.2(c), IX.B.2(e).) it is determined that a network connection with the image projection device 3 has been established



(EX-1009, FIGS. 1, 3.)

- e. Limitation 16(d):** *triggering transfer of said user selected arbitrary media content from said transmitter on the peripheral device to the wireless communications network and to the base node for displaying said user selected arbitrary media content on the first display, the input device being a physical actuator coupled to the peripheral device*

196. Uchida alone or in combination with Grimshaw discloses and/or suggests this limitation for reasons similar to those I explained above for limitation 1(f). (See analysis in Sections IX.B.1, IX.B.2(g).) For example, Uchida discloses transfer of image data from wireless communication unit 107 (e.g., a “transmitter”)

on a wireless device 1 (*e.g.*, a “peripheral device”) to the wireless communications network and to control unit 303 and wireless unit 306 (*e.g.*, a “base node”) for displaying image data on an LCD 323 and screen of image projection device 3 (*e.g.*, a “first display”).

197. For the same reasons discussed above regarding claim 1, a POSITA looking to implement Uchida’s image projection system would have sought out the details of how to configure a wireless communication among several user computers and a common display and therefore would have been led to teachings like that of Grimshaw, which describes such a wireless communications system and similarly transfers data from individual computers to a common display. This in turn would have led to the combined method of claim 16, just as discussed above in Section IX.B.1. For instance, Grimshaw discloses triggering wireless transfer of display image data signals (*e.g.*, “user selected arbitrary media content”) to a control module 12 for displaying on a display 22, for example using a button 344 (*e.g.*, “input device being a physical actuator”) coupled to user module 14 (*e.g.*, “peripheral device”). (EX-1008, ¶¶5, 19-20, 27-28; EX-1012, 5:8-6:17.)

12. Claim 19: *The method of claim 16, further comprising configuring the peripheral device to connect to the wireless communications network by pairing the peripheral device with the base node*

198. Uchida discloses this limitation. For example, Uchida discloses that “in order to wirelessly connect a computer device to a wireless LAN-compatible

image projection device, it is necessary to configure wireless communication settings for both the computer device and the image projection device.” (EX-1009, ¶0006.) Thus, a POSITA would have appreciated that typically some type of pairing process between user modules and the control module would have been required. For example, Uchida discloses configuring wireless device 1 (a peripheral device) to connect to the wireless communications network by pairing the wireless device 1 with image projection device 3. (See, e.g., EX-1009, ¶¶0042-0048, 0155, 0163-0167, FIG. 18.)

13. Claim 20: *The method of claim 16, further comprising displaying user selected arbitrary media content on the first display in accordance with a set of rules*

199. Uchida discloses this limitation. For example, Uchida discloses displaying image data (“user selected arbitrary media content”) on the display in accordance with a set of rules, such as rules for connection, auto-run operation process, a timeout process, etc. (See, e.g., EX-1009, ¶¶0153-0176, FIGS. 17-19.) For instance, display occurs only if it is determined that a predetermined effective time has not elapsed. (EX-1009, ¶¶0159-0162, 0170-0175, FIGS. 17, 19.)

14. Claim 21

200. Uchida alone or in combination with Grimshaw discloses and/or suggests all the limitations of claim 21.

a. Limitation 21(pre): An electronic meeting tool for communicating user selected arbitrary media content from users at a meeting comprising:

201. Uchida discloses this limitation for reasons similar to those I explained above for limitation 1(pre). (See analysis in Section IX.B.2(a).)

b. Limitation 21(a): a base node...the base node being adapted to receive user selected arbitrary media content from a user processing device via the wireless communications network, and to control display of the user selected arbitrary media content on the first display

202. Uchida discloses this limitation for reasons similar to those I explained above for limitation 1(a). (See analysis in Section IX.B.2(b).)

c. Limitation 21(b): the base node being integrated into a first display of a wireless communications network

203. Uchida discloses this limitation for reasons similar to those I explained above for claim 2. (See analysis in Section IX.B.3.)

d. Limitation 21(c): at least one peripheral device adapted to communicate the user selected arbitrary media content from the user processing device to the wireless communications network

204. Uchida discloses this limitation for reasons similar to those I explained above for limitation 1(b). (See analysis in Section IX.B.2(c).)

e. Limitation 21(d): wherein the at least one peripheral device is a connection unit comprising:

205. Uchida discloses this limitation for reasons similar to those I explained above for limitation 1(c). (See analysis in Section IX.B.2(d).)

f. Limitation 21(e): (a) a connector adapted to couple to a port of the user processing device, the user processing device having a second display and a memory

206. Uchida discloses this limitation for reasons similar to those I explained above for limitation 1(d). (See analysis in Section IX.B.2(e).)

g. Limitation 21(f): (b) a transmitter for transferring user selected arbitrary media content to the wireless communications network

207. Uchida discloses this limitation for reasons similar to those I explained above for limitation 1(e). (See analysis in Section IX.B.2(f).)

h. Limitation 21(g): (c) an input device configured to allow the user to carry out a user action on the input device that triggers transfer of said user selected arbitrary media content of said user processing device to said transmitter on the at least one peripheral device through said port, and from the transmitter to the wireless communications network to the base node of the wireless communications network for display on the first display, the input device being a physical actuator coupled to the at least one peripheral device

208. Uchida alone or the Grimshaw-Uchida combination discloses and/or suggests this limitation for reasons similar to those I explained above for limitation 1(f). (See analysis in Sections IX.B.1, IX.B.2(g).)

C. Ground III – Ichieda Discloses and/or Suggests the Features of Claims 1, 2, 6-10, 13, 15-17, and 19-21

1. Rationale to Combine the Embodiments of Ichieda

209. In Embodiment 3, as shown in FIG. 11, image display system 1 includes projector 50, laptop personal computer (PC) 90 (*i.e.*, image supply device), and information terminal 80 (*i.e.*, a cellphone). (EX-1006, ¶0129.) After a pairing process between laptop PC 90 and projector 50 (which involves information terminal 80 capturing a barcode image displayed on screen SC), laptop PC 90 functions as an image supply device connected via a network to projector 50, which displays the image based on the image signal input from laptop PC 90 in the area associated with the particular captured barcode. (*See, e.g.*, EX-1006, ¶¶0008-0017, 0135, 0150, 0163, FIGS. 11-13.)

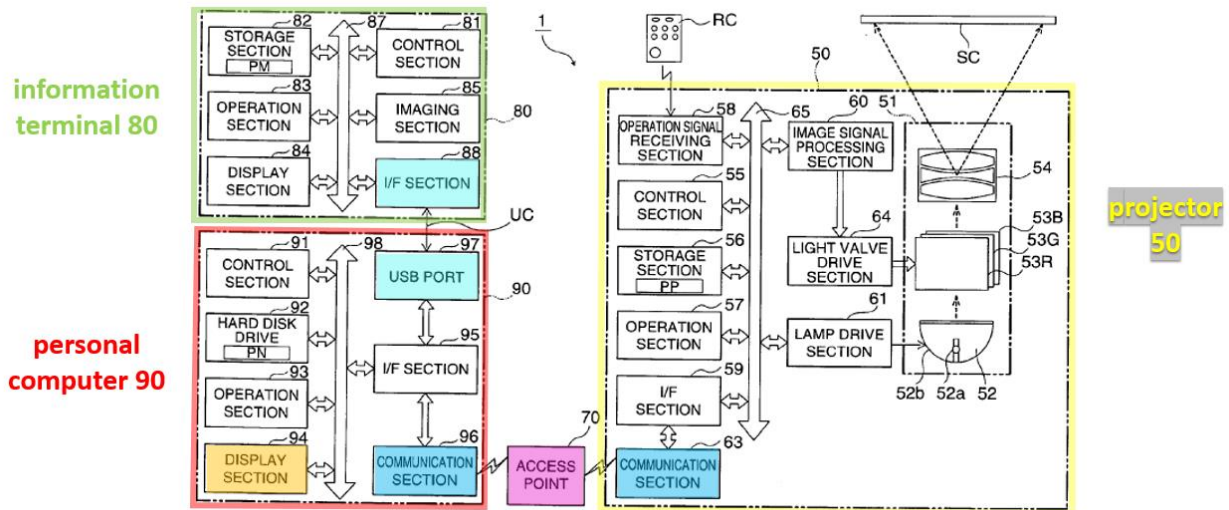


FIG. 12

(EX-1006, FIG. 12.)

211. In particular, Ichieda states the following regarding sending data back through the phone via USB port 97 to the interface section 88 of the phone:

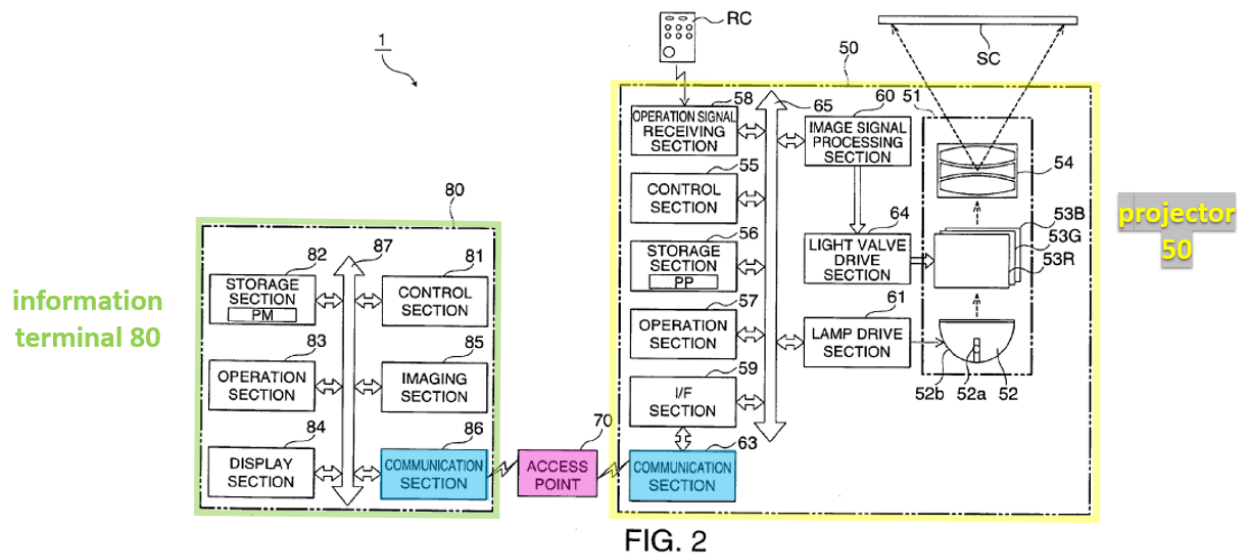
[t]he communication section 96 is a wireless LAN module compliant to the wireless LAN standard such as IEEE 802.11b, IEEE 802.11g, or IEEE 802.11a, and is capable of performing ... transmission of the image signal, and so on in response to the instructions of the control section 91. It should be noted that as the communication section 96, a wireless LAN card or a wireless LAN adaptor connectable to the card slot or the USB port can also be used. The USB port 97 is arranged to be able to perform data communication compliant to the USB standard with an external device, and is connected to the interface section 88 of the information terminal 80 via a cable UC in the present embodiment. (EX-1006, ¶¶0136-00137.)

Thus, Ichieda discloses transmitting the image signal out from the PC through the phone using a USB connection, instead of through out from PC's communication section 96 to the LAN.

212. Although Ichieda does not explicitly describe how an image signal is transmitted to the projector 50 in connection with this specific alternative to the third embodiment (*i.e.*, via a USB port to the information terminal apparatus 80), Ichieda does explain how to transmit an image signal from the information terminal apparatus 80 (cellphone) to the projector 50 in connection with Ichieda's first embodiment (*e.g.*, FIG. 1).

213. For example, Ichieda describes terminal 80, according to the first embodiment, as including communication section 86, which is a wireless LAN module "capable of performing transmission and reception of command relating to the wireless LAN connection, transmission of the image signal, and so on." (EX-1006, ¶0072.) With respect to the first embodiment, Ichieda teaches that "[t]he information terminal 80 is arranged to supply (transmit) an image signal to the projector 50 in a condition in which the network connection (wireless LAN connection) with the wireless LAN is established between the information terminal 80 and the projector 50...." (EX-1006, ¶0044, FIG. 2.) Specifically, control section 81 "retrieves the image data to be projected by the projector 50 from the storage section 82, and transmits the image data from the communication section 86 to the

projector 50 as the image signal.” (EX-1006, ¶0104.) Thus, the discussion of Ichieda’s first embodiment explains that communication section 86 in information terminal 80 can also be used to transmit an image signal to projector 50. Communication section 86 also described as similar to communication section 96. (EX-1006, ¶¶0072, 0136.)



(EX-1006, FIG. 2.)

214. Given that Ichieda had already explained how information terminal 80 can transmit the image signal, a POSITA would have understood Ichieda to disclose that the similar method of transmission could be used, namely utilizing communication section 86 of an information terminal 80 to transmit the image signal (as described with respect to the first embodiment) obtained from USB port 97 of the laptop PC 90 (as described in the third embodiment). As described with respect

to both the first and the third embodiment, communication section 63 of projector 50 could receive such an image signal via the wireless LAN.

215. Beyond Ichieda's explicit disclosure, a POSITA would have recognized the option to use a communication section of an information terminal, like that described in Ichieda's first embodiment, to transmit an image signal from a laptop PC to a projector in much the same way as described in the first embodiment (instead of directly from the laptop). In addition, a POSITA would have been motivated to use such a transmission configuration, for example, to free the laptop network card from use. A POSITA would have found such a combination of familiar elements straightforward and predictable at least because Ichieda describes the components (information terminal, communication section, USB port/interface, *etc.*) and explains how to arrange such transmission according to established methods (for example, wireless LAN standards and USB protocols, *etc.*). Given the guidance in Ichieda and the well-known components utilized, a POSITA would have had a reasonable expectation of success in achieving the claimed combination.

2. Claims 1 and 9

216. Ichieda discloses and/or suggests all the limitations of claims 1 and 9. For my analysis below, I have primarily relied on Ichieda's third embodiment as enhanced by the first embodiment as discussed above in Section IX.C.1. Also, it is necessary to discuss the first embodiment of Ichieda because Ichieda makes it clear

that the third embodiment is very similar to the first embodiment and therefore certain descriptions are applicable to both the first and third embodiments. (See, *e.g.*, EX-1006, ¶¶0131 (“As shown in FIG. 12, the projector 50 has the same configuration as in the first embodiment described above, the information terminal 80 has the same configuration as in the first embodiment except that the information terminal 80 has an interface (I/F) section 88 capable of wired data communication with an external device instead of the communication section 86.”))

a. Limitation 1(pre)/9(pre): An electronic meeting tool for communicating user selected arbitrary media content from users at a meeting comprising:

217. I have been asked to assume the preamble of claim 1 is limiting for the purposes of my analysis. If the preamble is not limiting, it would not change my analysis for the limitations below.

218. To the extent limiting, Ichieda teaches limitation 1(pre). For instance, Ichieda discloses “[a]n image display device for displaying an image based on an image signal input from a plurality of image supply devices via a network.” (EX-1006, abstract.) A POSITA would have appreciated that such an image display device could be used as an electronic tool for users in a meeting. For example, in the embodiment of Figure 1 (reproduced below), the image displayed on display section 84 of information terminal 80a is displayed in an area Aa on a screen SC. (See EX-1006, ¶¶0043, 0045 (“The projector 50 is capable of the wireless LAN

connection with four information terminals 80 (80a through 80d), and at the same time, is arranged to be able to have the image display area (the projection area PA) be divided into four sub-areas A (Aa through Ad). Therefore, the projector 50 is capable of displaying the received images from a plurality of (up to four) information terminals 80 connected via the wireless LAN respectively on the individual sub areas A.”), 0070, 0081-0083, FIGS. 1, 2, 6.) Similarly, for the information terminal 80b, 80c, and 80d, the content of their respective display section is respectively displayed in area Ab, Ac, Ad on a screen SC. (See EX-1006, ¶0088.)

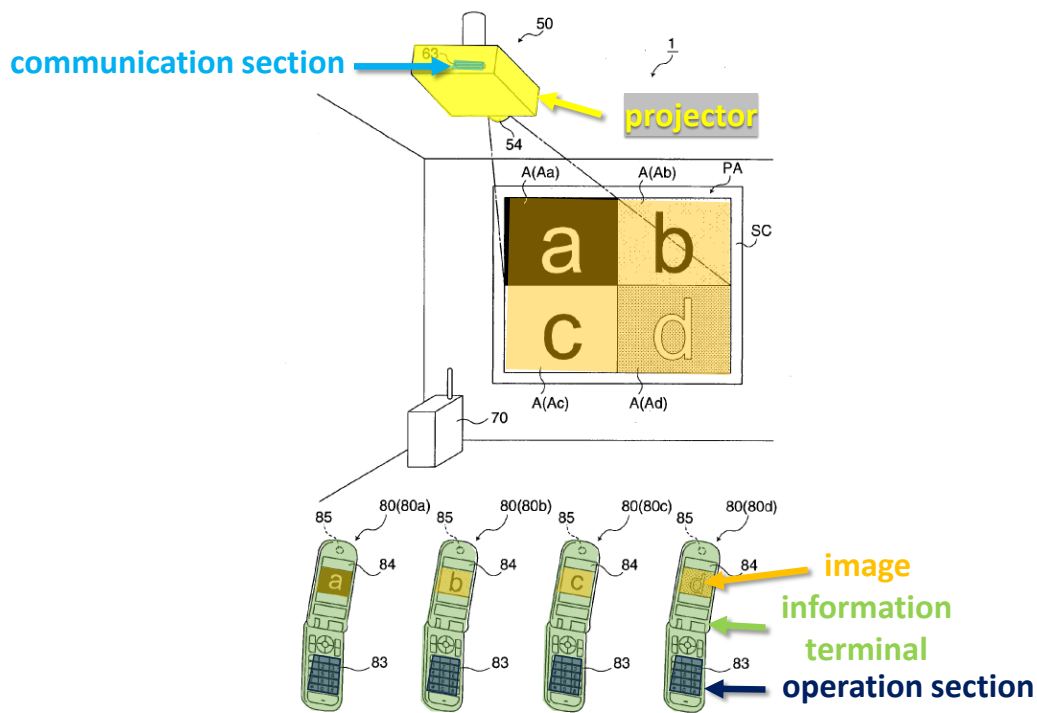


FIG. 1

(EX-1006, FIG. 1)

219. As discussed in further detail below, Ichieda’s third embodiment shown in FIG. 11-13 allows communication of content from display section 94 for multiple

laptop PCs, for example, one for each quadrant of the screen. (See, e.g., EX-1006, ¶¶0115-0117, 0127-0152, FIGS. 11-13; see also FIGS. 1-6, ¶¶0042-0048, 0058-0062, 0072-0095.)

220. As discussed above, I understand that the '951 patent states that “the term ‘arbitrary media content’ refers to “the fact that a user may generate, create or select any media content that is appropriate to display.” (EX-1001, 11:43-50.) As discussed further below, Ichieda’s image display device enables display based on an image signal input (e.g., “user selected arbitrary media content”) from an image source. (See, e.g., EX-1006, ¶0081 (where the image source is information terminal 80); see also *id.*, ¶¶0129, 0150 (where the image source is instead laptop 90 (third embodiment)).) Ichieda’s image signal of image source is thus consistent with description of “user selected arbitrary media content” provided by the '951 patent.

b. Limitation 1(a)/9(a): a base node, the base node being coupled to a first display, the base node being adapted to receive user selected arbitrary media content from at least one peripheral device via a wireless communications network, and to control display of the user selected arbitrary media content on the first display

221. Ichieda discloses and/or suggests this limitation. For example, Ichieda discloses an image display system 1 including communication section 63 and control section 55 (e.g., a “base node”). (EX-1006, ¶¶0054, 0060, 0127-0137, FIGS. 11-13.) Ichieda further discloses communication section 63 being coupled to projector 50 (e.g., a “first display”) as shown in Figure 12. (See EX-1006, ¶¶0050 (“As shown

in FIG. 2, the projector 50 is composed of an image projection section 51 as a display section....”), 0050, 0054, 0059-0062, 0129 (explaining that the projector 50 in the third embodiment has the same configuration as the projector 50 in the first embodiment), 0162 (explaining that the projector/screen could be another type of display), FIGS. 11-12.) Ichieda also discloses that communication section 63 and control section 55 are adapted to receive an image signal (*e.g.*, “user selected arbitrary media content”) from an image source, for example laptop 90 via a wireless LAN (*e.g.*, a wireless communications network) and to control display of the image signal on the screen SC. (*Id.*) For example, Ichieda discloses that “communication section 63 receives the image signal, the image signal is output to the image signal processing section 60.” (EX-1006, ¶60.) Image processing section 60, in conjunction with instructions from control section 55, “performs a scaling (resolution conversion) process on each of the image signals input from the respective information terminals 80 so that the images received from the individual information terminals 80 are displayed on the respective sub-area” of the screen. (*Id.*)

222. Further, Ichieda discloses a laptop type personal computer 90 may be provided with an information terminal 80 (*e.g.*, “at least one peripheral device”). (EX-1006, ¶¶0129-0137, FIGS. 11-12.)

c. Limitation 1(b)/9(b): *the at least one peripheral device being adapted to communicate the user selected arbitrary media content to the wireless communications network*

223. Ichieda discloses and/or suggests this limitation. For example, as discussed above in Section IX.C.1, a Ichieda describes terminal 80, according to the first embodiment, as including communication section 86, which is a wireless LAN module “capable of performing transmission and reception of command relating to the wireless LAN connection, transmission of the image signal, and so on.” (EX-1006, ¶0072.) With respect to the first embodiment, Ichieda teaches that “[t]he information terminal 80 is arranged to supply (transmit) an image signal to the projector 50 in a condition in which the network connection (wireless LAN connection) with the wireless LAN is established between the information terminal 80 and the projector 50....” (EX-1006, ¶0044.) For the reasons discussed above in Section IX.C.1, a POSITA would have motivated to implement an information terminal apparatus 80 (a “peripheral device”) being adapted to communicate an image signal (the “user selected arbitrary media content”) to the LAN (“wireless communications network”).

d. Limitation 1(c)/9(c): *wherein the at least one peripheral device is a connection unit comprising:*

224. Ichieda discloses and/or suggests this limitation. For example, as noted above, Ichieda discloses the interface section 88 of the information terminal 80 is connected to the USB port 90 of laptop PC 90 via a cable UC in the present

embodiment.” (EX-1006, ¶0137, FIGS. 11-12.) Further, as discussed in Section IX.C.1, the information terminal apparatus may further connect to a LAN to transfer an image signal to the projector 50 via the LAN.

e. Limitation 1(d)/9(c): the at least one peripheral device ... comprising (a) a connector adapted to couple to a port of a user processing device, the user processing device having a second display and a memory

225. Ichieda discloses and/or suggests this limitation. For example, as noted above, Ichieda discloses the interface section 88 of the information terminal 80 (e.g., a peripheral device) is connected to the USB port 97 of laptop PC 90 (e.g., a “user processing device”) via a cable UC (e.g., a connector). (EX-1006, ¶0137, FIGS. 11-12.) Ichieda also discloses that the laptop PC 90 includes a display section 94 (e.g., a “second display”) and a hard disk drive 92, as well as a ROM and a RAM, (e.g., a “memory”). (EX-1006, ¶0132-0135, FIG. 12.)

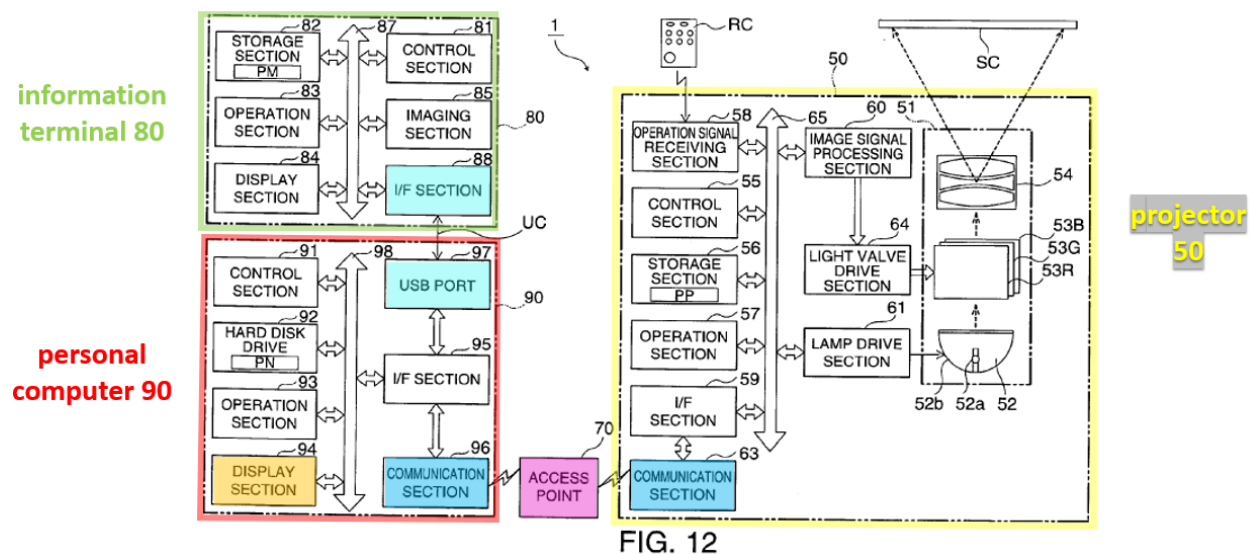


FIG. 12

(EX-1006, FIG. 12)

f. Limitation 1(e)/9(e): a transmitter for transferring user selected arbitrary media content to the wireless communications network

226. Ichieda discloses and/or suggests this limitation. For example, Ichieda discloses information terminal 80 may include a communication section 86 (*e.g.*, a “transmitter”), which is a wireless LAN module capable of transmission of the image signal (*e.g.*, “user selected arbitrary media content”) to the wireless communications network. (EX-1006, ¶¶0072-0080, 0081 (“Thus, the wireless [LAN] connection between the information terminal 80 and the projector 50 has established, and it becomes possible to transmit the image signal from the communication section 86 of the information terminal 80 to the communication section 63 of the projector 50.”), FIG. 3.) As discussed above regarding limitation 1(b), Ichieda discloses and suggests that such a technique could also be used in conjunction with the third embodiment (Figures 11-13). (See Sections IX.C.1, IX.C.2(c).)

227. A POSITA would have understood communication module 86 to be a transmitter based on Ichieda’s description of the device being compliant to IEEE 802.11 standards, which involve modulating and radiating an electromagnetic wave via a transmitter. (EX-1006, ¶0072 (“The communication section 86 is a wireless LAN module compliant to the wireless LAN standard such as IEEE 802.11b, IEEE 802.11g, or IEEE 802.11a, and is capable of performing transmission and reception of command relating to the wireless LAN connection, transmission of the image

signal, and so on in response to the instructions of the control section 81. It should be noted that in the case in which the information terminal 80 is equipped with a card slot or a USB port for connecting an external device, it is possible to use the wireless LAN card or the wireless LAN adaptor capable of connecting such a card slot or a USB port as the communication section 86.”); see also EX-1024, ¶0028, FIG. 3; EX-1027, ¶¶0017-0018, FIG. 4.)

g. Limitation 1(f): *(c) an input device configured to allow the user to carry out a user action on the input device that triggers transfer of said user selected arbitrary media content from the transmitter to the wireless communications network and to the base node through the wireless communications network for display on the first display, the input device being a physical actuator coupled to the at least one peripheral device*

Limitation 9(f): *an input device configured to allow the user to carry out a user action on the input device that triggers transfer of said user selected arbitrary media content from the transmitter to the wireless communications network and via the wireless communication network to the base node for display on the first display*

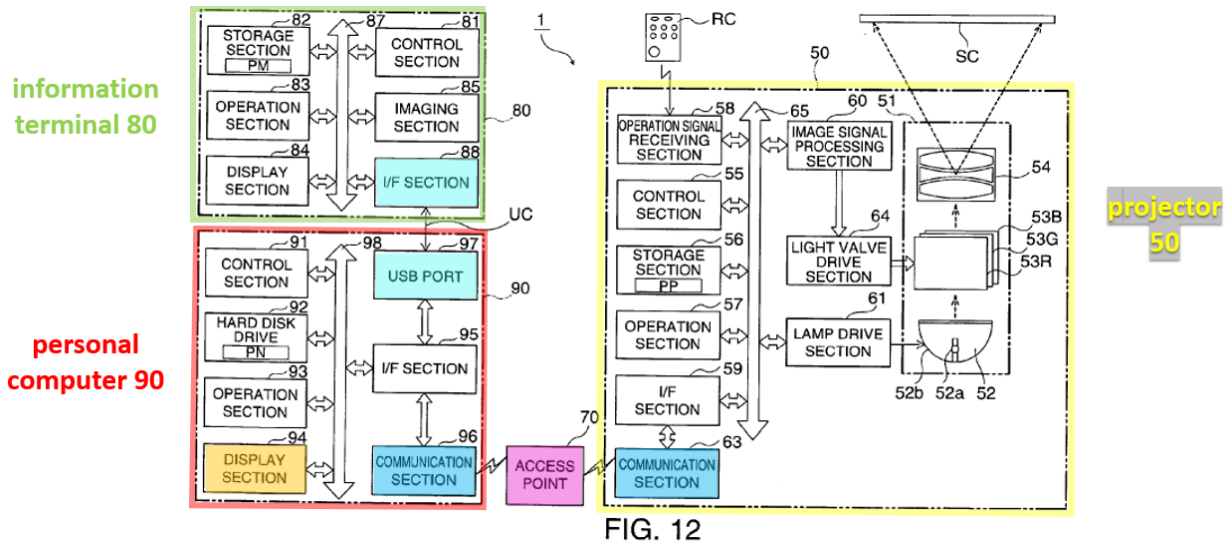
228. Ichieda discloses and/or suggests this limitation. For example, Ichieda discloses operation section 83 (e.g., an “input device”) includes several buttons (e.g., a “physical actuator”) and is configured to allow the user to carry out a user action on the information terminal 80 (e.g., a peripheral device) that triggers transfer of the image signal (e.g., “user selected arbitrary media content”) from communication section 83 (e.g., a “transmitter”) to the wireless communications network and to the

communications section 63 and control section 55 (*e.g.*, “base node”) through the wireless communications network for display on the screen SC of projector 50 (*e.g.*, a “first display”). (EX-1006, ¶¶0044, 0060, 0069 (“The operation section 83 is equipped with a plurality of operation buttons for performing various instructions to the information terminal 80 [such as] “a connection button” for instructing the wireless LAN connection....”), 0081-0083, 0107, FIGS. 3, 7, 13.) As illustrated in processes shown in Figures 3, 7, and 13, once a connection is established, the image signal is sent. (*Id.*) Thus, pressing the connection button triggers transmission to the projector.

229. As discussed above regarding limitation 1(b), Ichieda discloses and suggests that such a technique could also be used in conjunction with the third embodiment (Figures 11-13). (See Section IX.C.1.)

3. Claims 2, 10, and 17: *said base node is integrated in the first display*

230. Ichieda discloses and/or suggests the limitation of claim 2. For example, Ichieda discloses communication section 63 and control section 55 (*e.g.*, a “base node”) is integrated in the projector 50 (*e.g.*, a “first display”). (EX-1006, ¶¶0050, 0060 (“It should be noted that it is sufficient for the communication section 63 to be a wireless terminal device capable of connecting the wireless LAN, and the communication section 63 can be arranged to use ... a wireless [LAN] module previously built-in in the projector 50.”), 0162, FIGS. 2, 12.)



(EX-1006, FIG. 12.)

4. **Claim 6:** *The electronic meeting tool according to claim 1, wherein at least one channel is formed between the transmitter of the at least one peripheral device over the wireless communications network to the base node that is independent from the networking capability of the user processing device*

231. The teachings of Ichieda disclose and/or suggest all the limitations of claim 6. For example, Ichieda discloses a network connection (e.g., “at least one channel”) is formed between the communication section 86 (e.g., “transmitter”) of the information terminal 80 (e.g., “at least one peripheral device”) over the wireless communications network to the communication section 63 (e.g., “base node”) that is independent from the networking capability of the laptop PC 90 (e.g., “user processing device”) (EX-1006, ¶¶0005, 0006 (“the portable information terminal is arranged to be able to establish the network connection with the projector”), 0008, 0044 (“The information terminal 80 is arranged to supply (transmit) an image signal

to the projector 50 in a condition in which the network connection (wireless LAN connection) with the wireless LAN is established between the information terminal 80 and the projector 50, and corresponds to the image supply device of the embodiment of the invention.”), 0072, 0081 (“Thus, the wireless [LAN] connection between the information terminal 80 and the projector 50 has established, and it becomes possible to transmit the image signal from the communication section 86 of the information terminal 80 to the communication section 63 of the projector 50.”), FIGS. 2, 11-12.)

232. As discussed above regarding limitation 1(b), Ichieda discloses and suggests that communication section 86 could alternatively be used for transmission of the image signal in conjunction with the third embodiment (Figures 11-13). (See Section IX.C.1.)

5. ***Claim 7: The electronic meeting tool according to claim 1, wherein the at least one peripheral device is configured to encode, compress, and/or encrypt the user selected arbitrary media content when transmitting the user selected arbitrary media content from the transmitter to the base node of the wireless communications network***

233. The teachings of Ichieda disclose and/or suggest the limitation of claim 7. For example, Ichieda discloses the information terminal 80 (e.g., “at least one peripheral device”) is configured to encode and encrypt the image signal (e.g., “user selected arbitrary media content”) when transmitting image signal from the communication section 86 (e.g., “transmitter”) to the communications section 63 and

control section 55 (*e.g.*, “base node”) of the wireless communications network. (See EX-1006, ¶¶0005, 0056, 0072 (“The communication section 86 is a wireless LAN module compliant to the wireless LAN standard such as IEEE 802.11b, IEEE 802.11g, or IEEE 802.11a, and is capable of performing transmission and reception of command relating to the wireless LAN connection, transmission of the image signal, and so on”), FIGS. 2, 12.) For example, a POSITA would have understood the wireless LAN standards used by the communication section 86 include their own encoding schemes as part of the compliance with the standard.

234. As discussed above regarding limitation 1(b), Ichieda discloses and suggests that communication section 86 could alternatively be used for transmission of the image signal in conjunction with the third embodiment (Figures 11-13). (See Section IX.C.1.)

6. Claim 8: *The electronic meeting tool according to claim 1, wherein the first display has a processing unit and the base node is integrated into the processing unit*

235. Ichieda disclose and/or suggest the limitation of claim 8 for reasons similar to those I explained above for claim 2. (See analysis in Section ***) Additionally, Ichieda discloses the projector 50 (*e.g.*, “first display”) has, for example, control section 55 and image signal processing section 60 (*e.g.*, “processing unit”) (EX-1006, ¶0050 (“As shown in FIG. 2, the projector 50 is composed of an image projection section 51 as a display section, a control section

55, ... an image signal processing section 60....”), 0054 (“The control section 55 is provided with a central processing unit (CPU)”), 0061 (“The image signal processing section 60 is an image processor, and performs signal processing on the image signal input via the input terminal (not shown) or the interface section 59 in accordance with the instructions of the control section 55....”), 0162, FIGS. 2, 12.)

7. Claim 13: *The electronic meeting tool according to claim 9, wherein the input device is on a keyboard connected to the user processing device, is displayed on the second display and is able to be activated with a mouse pointer connected to the user processing device, or is displayed on the second display which is a touch screen and is able to be activated by the user action of touching the input device*

236. Ichieda discloses and/or suggests the limitation of claim 13. For example, Ichieda discloses operation section 83 (*e.g.*, an “input device”) is on an information terminal connected to the laptop PC 90 (*e.g.*, an “user processing device”). (See, *e.g.*, EX-1006, ¶¶0065, 0067, 0069, 0071, FIGS. 1 and 11.) Based on Ichieda’s depiction of a mobile device in Figures 1 and 11 as the information terminal 80, POSITA would have understood such devices may include a keyboard as the operation section 83 as was known in the art at the time of the alleged invention.

8. Claim 16

237. Ichieda discloses and/or suggests all the limitations of claim 16.

a. Limitation 16(pre): *A method for communicating arbitrary media content from users at a meeting comprising:*

238. Ichieda discloses and/or suggests this limitation for reasons similar to those I explained above for limitation 1(pre). (See analysis in Section IX.C.2(a).)

b. Limitation 16(a): *operating a first display, wherein the first display is coupled to a base node, the base node being adapted to receive user selected arbitrary media content from a peripheral device via a wireless communications network and to control display of the user selected arbitrary media content on the first display*

239. Ichieda discloses and/or suggests this limitation for reasons similar to those I explained above for limitation 1. (See analysis in Sections IX.C.1, IX.C.2(b).) Further, Ichieda discloses operating a projector 50 that “is composed of an image projection section 51 as a display section” (EX-1006, ¶¶0050), which a POSITA would understand to be a “first display.” (See, e.g., EX-1006, ¶¶0044-0047, 0050, 0055, 0129, FIGS. 1-3 and 11-13.) Ichieda’s projector display is coupled to (and integrated with) a communication section 63 and control section 55 (e.g., a “base node). (See, e.g., EX-1006, ¶¶0050, 0067, 0069, 0071, FIGS. 1-2 and 11-12, see also *id.*, ¶0162 (explaining that the projector may alternatively be other known types of display).) Ichieda’s communication section 63 and control section 55 (“base node”) are adapted to receive the image signal from information terminal apparatus 80 via a wireless communications network and to control display of the

user selected arbitrary media content on the first display, as previously discussed. (See Section IX.C.2(b).)

c. Limitation 16(b): *connecting the peripheral device to a port of a user processing device and communicating the user selected arbitrary media content to the wireless communications network*

240. Ichieda discloses and/or suggests this limitation for reasons similar to those I explained above for limitations 1(d) and 1(e). (See analysis in Section IX.C.2(e), IX.C.2(f).) For example, Ichieda discloses connecting the information terminal 80 (*e.g.*, a “peripheral device”) to a USB port 97 of laptop PC 90 (*e.g.*, a “user processing device” and communicating the image signal (*e.g.*, “user selected arbitrary media content”) to the wireless communications network. (See, *e.g.*, EX-1006, ¶¶0044, 0047, 0081, 0128-0150, FIGS. 11-13.)

d. Limitation 16(c): *triggering transfer of said user selected arbitrary media content from said transmitter on the peripheral device to the wireless communications network and to the base node for displaying said user selected arbitrary media content on the first display, the input device being a physical actuator coupled to the peripheral device*

241. Ichieda discloses and/or suggests this limitation for reasons similar to those I explained above for limitation 1(f). (See analysis in Section IX.C.2(g).)

9. Claim 19: *The method of claim 16, further comprising configuring the peripheral device to connect to the wireless communications network by pairing the peripheral device with the base node*

242. The teachings of Ichieda disclose and/or suggest the limitation of claim 19. For example, Ichieda discloses using a barcode displayed on a screen, the information terminal 80 is connected to the projector. (See, e.g., EX-1006, ¶¶0075-0083, 0140-0150, FIGS. 3, 13.) Specifically, Ichieda discloses configuring information terminal 80 (e.g., the “peripheral device”) and laptop PC 90 to connect to the wireless communications network by pairing the peripheral device with projector 50 (e.g., the “base node”). (Ex. 1006, ¶¶0138-0152 (“In the step S329, the control section 91 judges whether or not the connection response command allowing the connection has been received from the projector 50. If it has been received, the wireless LAN connection with the projector 50 is established, and the process proceeds to the step S330.”), FIGS. 11-13.)

10. Claim 20: *The method of claim 16, further comprising displaying user selected arbitrary media content on the first display in accordance with a set of rules*

243. The teachings of Ichieda disclose and/or suggest the limitation of claim 20. For example, Ichieda discloses displaying one or more image signals on the screen SC of projector 50 in accordance with a set of rules. (See, e.g., EX-1006, ¶¶0058 (various operations), 0069 (connection and disconnection), 0073-0091

(connection and display in particular sub-areas according to barcodes), 0106-0111 (display switching rules), 0119-0123 (same), FIGS. 1, 3, 6, 9-11.)

11. Claim 21

244. Ichieda discloses and/or suggests all the limitations of claim 21.

a. Limitation 21(pre): *An electronic meeting tool for communicating user selected arbitrary media content from users at a meeting comprising:*

245. Ichieda discloses and/or suggests this limitation for reasons similar to those I explained above for limitation 1(pre). (See analysis in Section IX.C.2(a).)

b. Limitation 21(a): *a base node...the base node being adapted to receive user selected arbitrary media content from a user processing device via the wireless communications network, and to control display of the user selected arbitrary media content on the first display*

246. Ichieda discloses and/or suggests this limitation for reasons similar to those I explained above for limitation 1(a). (See analysis in Section IX.C.2(b).)

c. Limitation 21(b): *the base node being integrated into a first display of a wireless communications network*

247. Ichieda discloses and/or suggests this limitation for reasons similar to those I explained above for claim 2. (See analysis in Section IX.C.3.)

d. Limitation 21(c): *at least one peripheral device adapted to communicate the user selected arbitrary media content from the user processing device to the wireless communications network*

248. Ichieda discloses and/or suggests this limitation for reasons similar to those I explained above for limitation 1(b). (See analysis in Section IX.C.2(c).)

e. Limitation 21(d): *wherein the at least one peripheral device is a connection unit comprising*

249. Ichieda discloses and/or suggests this limitation for reasons similar to those I explained above for limitation 1(c). (See analysis in Section IX.C.2(d).)

f. Limitation 21(e): *(a) a connector adapted to couple to a port of the user processing device, the user processing device having a second display and a memory*

250. Ichieda discloses and/or suggests this limitation for reasons similar to those I explained above for limitation 1(d). (See analysis in Section IX.C.2(e).)

g. Limitation 21(f): *(b) a transmitter for transferring user selected arbitrary media content to the wireless communications network*

251. Ichieda discloses and/or suggests this limitation for reasons similar to those I explained above for limitation 1(e). (See analysis in Section IX.C.2(f).)

- h. Limitation 21(g): (c) *an input device configured to allow the user to carry out a user action on the input device that triggers transfer of said user selected arbitrary media content of said user processing device to said transmitter on the at least one peripheral device through said port, and from the transmitter to the wireless communications network to the base node of the wireless communications network for display on the first display, the input device being a physical actuator coupled to the at least one peripheral device***

252. Ichieda discloses and/or suggests this limitation for reasons similar to those I explained above for limitations 1(d) and 1(f). (See analysis in Sections IX.C.2(e), IX.C.2(g).)

IV. CONCLUSION

253. My opinions are based upon the information that I have considered to date. I am unaware of any evidence of secondary considerations with respect to the '951 patent that would render any of the asserted claims non-obvious. I reserve the right, however, to supplement my opinions in the future to respond to any arguments raised by the owner of the '951 patent and to consider new information that becomes available to me.

254. 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, and 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 Section 1001 of Title 18 of the United States Code.

By: Kevin C Almeroth
Kevin C. Almeroth, Ph.D.

Date: September 12, 2024