UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LG ELECTRONICS, INC.
Petitioner

v.

MONDIS TECHNOLOGY LTD.
Patent Owner

Case: IPR2015-00938

Patent 6,549,970

PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 6,549,970 IPR2015-00938

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Pursuant to 35 U.S.C. § 311, Petitioner hereby respectfully requests *inter partes* review of claim 22 of U.S. Patent No. 6,549,970 ("the '970 Patent") (Ex. 1001) which issued on April 15, 2003. The challenged claim is unpatentable under 35 U.S.C. §102 and §103 over the prior art publications identified and applied in this petition (the "Petition").

I. MANDATORY NOTICES

Pursuant to 37 C.F.R. §42.8, Petitioner discloses the following:

A. Real Parties-In-Interest. LG Electronics U.S.A., Inc. is a real party-in-interest with Petitioner LG Electronics, Inc.

B. Related Matters. Pursuant to 37 C.F.R. § 42.8(b)(2), Petitioner submits that the '970 Patent is the subject of a patent infringement lawsuit brought by the Patent Owner, Mondis Technology Ltd. ("Mondis") (*see* Ex. 1004), against Petitioner in the United States District Court for the Eastern District of Texas, Case No. 2:14-cv-00702, captioned *Mondis Technology Ltd. v. LG Electronics, Inc. and LG Electronics U.S.A., Inc.* The '970 Patent has also been asserted in the actions listed in the chart below.

Description	Docket Number
Mondis Technology Ltd v. LG Electronics, Inc. et al.	2:07-cv-565 EDTX
Mondis Technology Ltd v. Top Victory Electronics (Taiwan) Co. Ltd. et al.	2:08-cv-478 EDTX
Mondis Technology Ltd. v. LG Electronics, Inc. et al.	2:09-cv-020 EDTX
Mondis Technology Ltd. v. Chimei Innolux Corp., and Innolux Corporation	2:11-cv-378 EDTX
Mondis Technology Ltd. v. Hon Hai Precision Industry Co. Ltd.	2:12cv-309 EDTX

The '970 Patent is currently the subject of the *inter partes* reexamination having control no. 95/000,457 (the "'457 reexam") and *ex partes* reexamination having control no. 90/013,388 (the "'388 reexam"). Additional related proceedings involving patents related to the '970 Patent include reexamination control nos. 90/013,237, 90/013,238, 90/013,389, 90/013,390, 90/13,391, 90/013,392, 95/000,455, 95/000,456; 95/000,458; 95/000,459; and 95/000,460.

C. Lead and Back-up Counsel.

Petitioner provides the following designation of counsel:

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D. Service Information. Pursuant to 37 C.F.R. §42.8(b)(4), Petitioner identifies

the following service information: Please direct all correspondence regarding this proceeding to lead counsel at the address identified above. Petitioner consents to electronic service by email: rpluta@mayerbrown.com, mword@mayerbrown.com, ssiddiqui@mayerbrown.com, bwasserman@mayerbrown.com, with a courtesy copy to Mondis-IPR-MayerBrown@mayerbrown.com.

II. PAYMENT OF FEES

Pursuant to 37 C.F.R. § 42.103, $23,000 is being paid at the time of filing this petition, charged to Deposit Account **130019**. Should any further fees be required by the present Petition, the Patent Trial and Appeal Board ("the Board") is hereby authorized to charge the above-referenced Deposit Account.

III. STANDING

Pursuant to 37 C.F.R. § 42.104(a), Petitioner certifies that the patent sought for review, the '970 Patent, is available for *inter partes* review and that Petitioner is not barred or estopped from requesting an *inter partes* review of the '970 Patent.

IV. 315(B) CERTIFICATION

For the reasons discussed below, Petitioner certifies that it has standing pursuant to 37 C.F.R. §42.104(a). Petitioner certifies that the '970 Patent is available for *inter partes* review and that Petitioner is not barred or estopped from requesting an *inter partes* review of the patent.

On January 11, 2008, Patent Owner served a complaint alleging infringement of the '970 Patent against Petitioner in the Eastern District of Texas entitled, *Mondis*

Tech. Ltd. v. LG Electronics, Inc., No. 2:07-cv-00565-TJW-CE ("the Dismissed Complaint"). Ex. 1005. On September 17, 2009, that action was dismissed without prejudice for "Unreleased Products" and with prejudice for the remaining products. Ex. 1006 Order of Dismissal. On October 16, 2014, Patent Owner served a complaint re-alleging infringement of the '970 Patent against Petitioner in the Eastern District of Texas entitled, *Mondis Tech. Ltd. v. LG Electronics, Inc.*, No. 2:14-cv-00702. Ex. 1004. This Petition is filed less than one year after the service of a complaint.

The Dismissed Complaint does not bar this Petition for at least three reasons: (1) the plain language of the statute recites "a complaint," not the first complaint; (2) the Patent Owner and Petitioner were left in the same legal position as though the Dismissed Complaint had never been served with respect to the "Unreleased Products," which are the currently accused products; and (3) equity and public policy concerns support a finding that the Dismissed Complaint does not start the clock for purposes of §315(b). Thus, as discussed below, Petitioner has standing to file this Petition.

First, under §315(b) "[a]n inter partes review may not be instituted if the petition requesting the proceeding is filed more than one year after the date on which the petitioner, real party in interest, or privy of the petitioner is served with *a complaint* alleging infringement of the patent." [1] Based on the plain language of the statute, this

[1] Unless otherwise indicated all emphasis herein for quoted excerpts is added.

Petition is filed within one year of service of *a complaint* alleging infringement of the '970 Patent, which was served on October 16, 2014. *See* Ex. 1004. That is, the statute does not specify that the one year clock runs from the first complaint alleging infringement of the patent. And, §315(b) should be read in view of the discretion the Board has to act in any way not expressly prohibited by the statute. *See Target Corp. v. Destination Maternity Corp.*, IPR2014-00508, paper 28, at 7-10 (Feb. 12, 2015); *see also id.* at Dissent, at 2 ("The majority reads §315(c) as if it grants discretion for the Board to act in any way not expressly prohibited by the statute."). The statute recites "a complaint" and here, Petitioner filed its Petition within one year of service of "a complaint" alleging infringement of the '970 Patent.[2]

Second, following the dismissal of the Dismissed Complaint, Patent Owner and Petitioner were left in the same legal position with respect to the "Unreleased Products" as though the Dismissed Complaint had never been served. *See Oracle Corp. v. Click-to-Call Techs. LP*, IPR2013-00312, paper 40, 4 (Dec. 18, 2013) ("We have determined that, because that patent infringement suit was dismissed without prejudice, Federal Circuit precedent interprets such a dismissal as leaving the parties in

[2] Petitioner acknowledges that one panel (IPR2013-00168, Paper No. 9) disagreed with this interpretation, however, that decision is not precedent for this Board and, in view of *Target*, this Board may broadly interpret "a complaint" to include the later filed complaint, which is not prohibited by the statute.

the same legal position as if the underlying complaint had never been served."). That is, Patent Owner was permitted to sue Petitioner for infringement on the '970 Patent for all the "Unreleased Products." This means the parties were left as though the action had never been brought with respect to those "Unreleased Products," necessarily reserving arguments of infringement and invalidity for both parties with respect to the '970 Patent. Indeed, this is what has transpired, since the currently accused products are the "Unreleased Products" resultant from the Dismissed Complaint. Thus, the prior dismissal should be interpreted as a dismissal without prejudice and the Board should consider the Dismissed Complaint as never having been served.

Third, equitable considerations favor a broad interpretation of §315(b). As a matter of equity, if the prior dismissal permits Patent Owner to continue to sue Petitioner on all of the patents from the Dismissed Complaint, Petitioner should retain its recourse under the AIA with respect to all of the patents. According to the Trial Practice Guide at 48756, "the Office's goal is to conduct proceedings in a timely, *fair,* and efficient manner." Because Patent Owner is allowed to continue to assert the same patents against Petitioner, fairness dictates that Petitioner be permitted to file this Petition now that Patent Owner has re-asserted the '970 Patent in a new complaint. This is especially true where Patent Owner is reasserting the '970 Patent against Unreleased Products implicated in the prior case, and which were dismissed

from that case without prejudice.

Public policy considerations also favor a broad interpretation of § 315(b). If a dismissal both with and without prejudice is interpreted as one that was dismissed with prejudice for the purposes of § 315(b), then parties will have less incentive to settle and less flexibility to craft creative settlement agreements in cases based on a dismissal of the underlying suit with prejudice as to some products and without prejudice as to others. That is, a defendant is unlikely to agree to a dismissal that would leave it open to future infringement allegations from a plaintiff but at the same time eliminate its ability to seek IPR in the future. Thus, a decision finding that a dismissal both with and without prejudice should be interpreted as a dismissal with prejudice for purposes of §315(b) would have the practical effect of deterring settlement.

Therefore, for at least these reasons, the Dismissed Complaint does not bar or estop Petitioner from requesting *inter partes* review of the '970 Patent and thus, Petitioner has standing under 37 C.F.R. §42.104(a).

V. REQUEST FOR *INTER PARTES* REVIEW OF CLAIM 22 OF THE '970 PATENT

Pursuant to 37 C.F.R. § 42.104(b), Petitioner requests that the Board find unpatentable claim 22 of the '970 Patent. Such relief is justified as the alleged invention of the '970 Patent was described by others prior to the effective filing date of the '970 Patent.

A. Technology Background

The '970 Patent is directed to addressing alleged problems with configuring multi-scan displays in the early 1990s. Multi-scan displays are capable of displaying images in multiple different dimensions and formats, and, at the time, multi-scan displays would themselves determine the most appropriate display setting and configuration based on the input signal from a video source, and generally required input from the user to do so. Ex. 1001 at 1:40-2:18.[3] According to the '970 Patent, what was needed was a display that would communicate with the video source so it could determine the appropriate settings for the display. *Id.* at 2:19-36.

The references below demonstrate that the fundamental concepts described in the '970 Patent were neither new nor innovative at the time of the alleged invention, and that the claims of the '970 Patent are not valid. As described below, the well known, obvious nature of the purported inventions claimed in the '970 Patent was recognized during the '457 reexamination, which rejected many key claims on multiple grounds. '457 Reexamination History at January 23, 2015 Notice of Intent to Issue Reexam Certificate.

VI. The Alleged Invention Of The '970 Patent

The alleged invention of the '970 Patent is directed to variations on a display unit that is capable of receiving control instructions from a connected computer. Ex.

[3] Throughout this Petition, the shorthand format X:Y-Z refers to column X, lines Y-Z of a reference.

1001 at 4:58-60. A microcomputer uses these control instructions to adjust the displayed image. *Id.* at 4:60-67. The display can be adjusted in size, position, brightness, contrast, and/or color. *Id.* at 4:67-5:3. In addition, the display unit includes a memory which stores information such as user adjustment data, delivery adjustment data, identification ("ID") numbers, and/or factory preset values. *Id.* at Fig. 2, 5:15-29. The '970 Patent also discloses that when receiving control instructions from an external computer, the communication controller can send the contents of the display's memory, including ID numbers, to the computer. *Id.* at Fig. 1, 3:14-16, 5:64-65.

A. The Prosecution History Of The '970 Patent

The '970 Patent issued from the '291 Application (U.S. Patent Application No. 09/732,291) filed on December 8, 2000. The Examiner issued a non-final Office action on July 5, 2001, in which original claims 1, 2, 4, 5, 7-10, and 12-16 were rejected under 35 U.S.C. §103(a) over U.S. Patent 5,276,458 to Sawdon in view of U.S. Patent 4,991,023 to Nicols, claims 18-35 were allowed, and claims 3, 6, 11, and 17 were objected to as depending from rejected claims but containing allowable subject matter.

In response to the Examiner's claim rejection, the Patent Owner filed a non-final response on December 5, 2001, in which the Patent Owner amended the claims 1, 4, 7, and 12 to recite that the display interface allowed bi-directional communication. The response also cancelled claims 3, 6, 11, 17 (which recited the bi-directional limitation in

dependent claim form), cancelled claims 27-35 and added new claims 36-39, without any particular arguments.

The Patent Owner filed a supplemental response on February 4, 2002, in which the Patent Owner amended the specification without any particular arguments.

The Examiner issued a Notice of Allowability on April 22, 2002 indicating the prior art in the record did not teach or suggest that a communication control circuit enables bi-directional communication with the display unit and the computer.

The Patent Owner filed an Request for Continued Examination (RCE) on June 4, 2002, in which the Patent Owner filed an Information Disclosure Statement (IDS). The Examiner issued a second Notice of Allowability June 28, 2002

The Patent Owner filed an Request for Continued Examination (RCE) on August 5, 2002, in which the Patent Owner added new claims 40-42 without any particular arguments. The Examiner issued a third Notice of Allowability on September 30, 2002 referencing the same allowable subject matter that was in the Notice of Allowability issued on April 22, 2002 and recited in claims 1, 2, 4, 5, 7-9, 12-16, 18-26, and 36-42. The '970 Patent issued on April 15 2003. Ex. 1003.

B. The '457 Reexamination

The core aspects of the inventions claimed in the '970 Patent have already been found by an Examiner and the Board to be both anticipated and obvious over multiple references. '457 Reexamination History at January 23, 2015 Notice of Intent

to Issue Reexam Certificate. The Corrected Request for the '457 Reexamination was filed on May 7, 2009. At the inception of that proceeding, the USPTO found that the references presented a substantial new question of patentability with respect to, among others, claims 18-21, 23-25, 27, and 28 based on multiple references, including the Schmidt reference relied upon herein.

On September 2, 2011, the Office issued an Action Closing Prosecution ("ACP"), rejecting claims 23-25, 27, and 28. On April 23, 2012, the Patent Owner and the Requestor both filed a Notice of Appeal, and subsequently Appeal Briefs and Rebuttal Briefs. On July 9, 2014, the Patent Board issued a decision affirming the Examiner's decision. On January 23, 2015 the Examiner issued a Notice of Intent to Issue a Reexamination Certificate.

Claim 22 was found to be patentable because the prior art allegedly did not disclose a transmission of an identifier "uniquely identifying the display unit" from the display to a connected device. '457 Reexamination History at January 23, 2015 Notice of Intent to Issue Reexam Certificate. "Uniquely identifying" was construed to require an identifier that could identify a specific display as opposed to merely a type of display. *Id.* at September 2, 2011 Action Closing Prosecution, p. 16. As described below, the Nadan, Wasti, and Satoru references disclose the additional subject matter recited in claims 22 and render it unpatentable, either alone or in combination with other references.

C. The '388 Reexamination

The '388 Reexamination was filed on November 13, 2014, challenging claims 1-17, 22, 24, 26, and 29 of the '970 Patent. Reexamination of all challenged claims was instituted on December 24, 2014.

D. Challenged Claim 22

Claim 22 recites a display capable of bidirectional communication with a connected device. The display transmits "display unit information" to a connected video source (*e.g.*, a computer), which is used by the video source to identify the display and provide a signal, such as a compatible video signal, in response. Petitioner notes that while the specification may disclose that a computer uses the display unit information to identify the capacities of the display and generate a compatible video signal, the Patent Owner has alleged that claim 22 merely requires that the video source provide a "signal" based on the display unit information.

Claim 22 is distinguished from the other claims rejected in the '457 reexamination in that it additionally recites that the display stores and transmits identification information for "uniquely identifying" the display, which is transmitted to the connected device. During the '457 Reexamination, "uniquely identifying" was construed to require an identifier that could identify a specific display as opposed to merely a type of display. September 2, 2011 Action Closing Prosecution, p. 16. Claim 22 is presented below.

22. A method of communicating between a display unit and a video source

from which video signals are sent to the display unit for display, the method comprising the steps of:

communicating display unit information stored in a memory of the display unit from the display unit to the video source, wherein said display unit information includes an identification number for uniquely identifying the display unit; and

sending a signal from the video source to the display unit, wherein said signal is generated based on the display unit information,

wherein information is bi-directionally communicated with the video source and the display unit.

VII. SUMMARY OF PRIOR ART TO THE '970 PATENT FORMING THE BASIS FOR THIS PETITION

A. Nadan

U.S. Patent No. 5,321,750 ("Nadan") (Ex. 1009) was filed on May 8, 1992 and accordingly is 102(e) prior art to the '970 Patent. Nadan is directed to a system for networked transmission of video data between an encoder/transmitter and multiple displays, referred to as decoder/receivers, as illustrated in Figure 1.

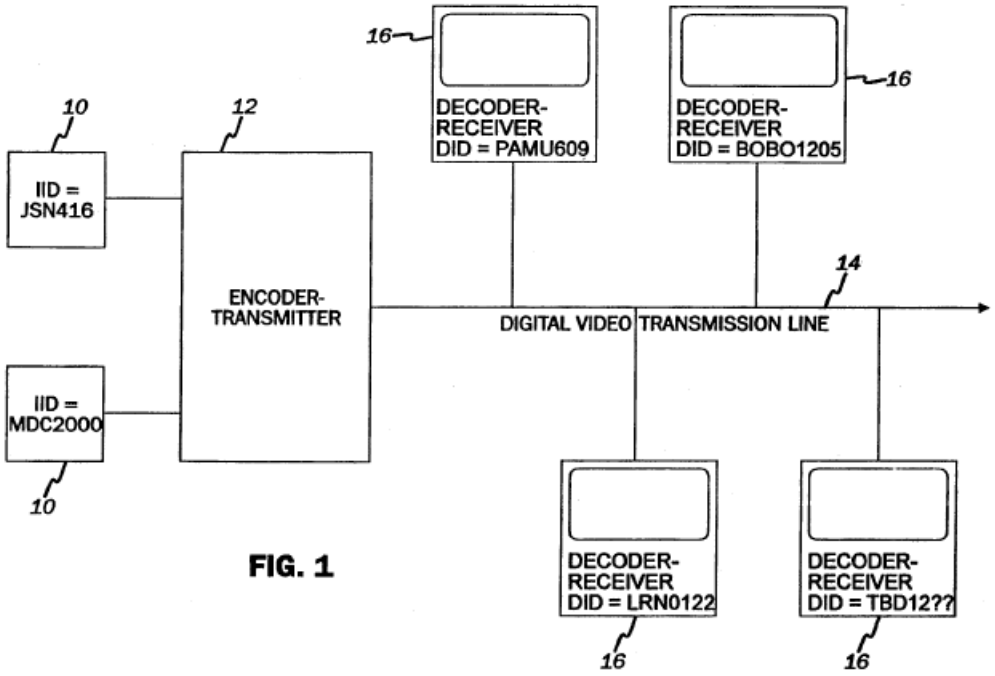


FIG. 1

Nadan discloses that video signals addressed to each decoder/receiver must be accompanied by a unique identifier. The decoder/receivers store video identifiers, and upon receiving video data, compare the unique identifier accompanying the video data with a stored video identifier before using the data.

> "Authorized decoders are provided with enable reception keys so that subsequently transmitted data having an information identification code matching a reception key at a decoder-receiver may be received for subsequent display on the video screen."

Ex. 1009 at Abstract.

Additionally, Nadan discloses that a unique "polling ID" can be used for communications between the decoder/receivers and a central CPU associated with the encoder.

> At installation, the host CPU 425 assigns a unique control bus address to each decoder. This address consists of a strand ID, which identifies the RS-422 or 485 line to which the decoder is connected, and a 5-bit polling ID. The polling scheme allows the host CPU 425 to poll each decoder using a single byte, thus making the most frequently used signal the shortest length.

Id. at 36:39-45.

B. Wasti

European Patent Pub. No. EP 0 525 363 B1 ("Wasti") (Ex. 1010) was published on February 3, 1993 and is thus 102(a) prior art to the '970 Patent. Wasti is directed to a networked video system that distributes video from a central controller to one or more terminals. Each of the terminals is connected to a video controller and one or more displays, as illustrated in Figure 2.

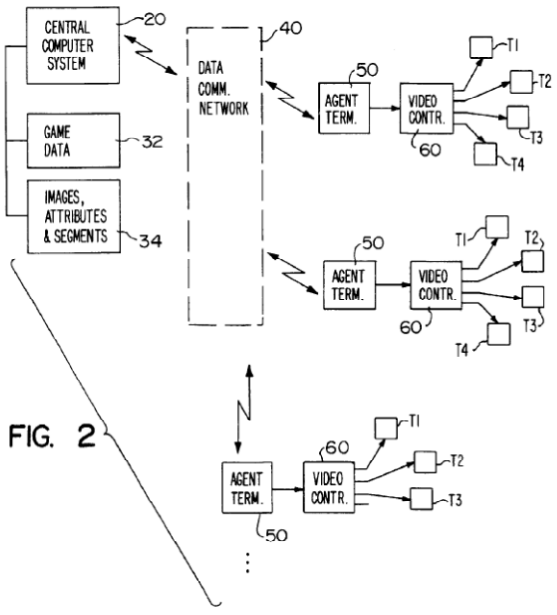


FIG. 2

The central computer of Wasti transmits unique identifiers to address the agent

terminals. These identifiers are used by each terminal to determine if it should process received commands.

> Communications along the serial communication path of serial controller U7, buffer U11 and port P5 are bidirectional. Programmable logic array U8 stores an identification code unique to the particular controller 60, such as a serial number, for use by a remote central computer communicating with the controller 60. Data received at controller 60 along the communication path can include an encoded identification code for comparison with the code stored in logic array U8, thus allowing the remote computer to address individual controllers 60 in this manner.
>
> Ex. 1010 at 6:26-36.

Wasti also discloses that return communications from the controllers include the controller's unique identifier.

> Alternatively, **the identification code can be transmitted to the remote computer together with acknowledgement of a transmission or with other data**,[4] allowing the remote computer uniquely to determine the source of a transmission it receives on communication channels open to a plurality of controllers 60. In a network including such identification it is not necessary for all the controllers to be identical or to be operated identically **because the remote computer can tailor transmissions to the controller, and interpret transmissions received from the controller**, in accordance with data stored at the remote computer relating to the character of the

[4] Unless indicated otherwise, all emphasis herein is added.

controller or the establishment in which it is located. *Id.* at 6:36-49 .

C. Baji

U.S. Patent No. 5,027,400 ("Baji") (Ex. 1011) issued on June 25, 1991. Thus, Baji is prior art to the '970 Patent under at least 35 U.S.C. § 102(b). Baji was not considered by the PTO during prosecution or reexamination of the '970 Patent.

Baji discloses a bidirectional video broadcast system, similar to the "on demand" systems commonly used by today's cable providers. *See* Ex. 1011 at Abstract. Baji's system sends advertisements or programs to subscribers based on a subscriber's preferences. *Id.* A network terminal 111 (shown in Fig. 1-2) on the subscriber side communicates bidirectionally with a broadcast station 115. *Id.* at Abstract, 1:62-64, 3:40-56. The subscriber terminals each include a "subscriber code" to distinguish each subscriber terminal from others. *See id.* at 3:57-4:52, 9:64-66, Fig. 12.

D. Schmidt

U.S. Patent No. 5,285,197 ("Schmidt") (Ex. 1012) was filed on April 28, 1991 and issued February 8, 1994. As such, it is prior art to the '970 Patent under 35 U.S.C. § 102(e). Schmidt discloses a bidirectional display system where a display sends display-specific information to a graphics controller and the graphics controller configures itself according to the received information so that it can generate signals compatible with the display. Ex. 1012 at Abstract, 2:60-3:3.

Schmidt discloses that the memory 112 of a display stores, among other things, a "plurality of bits used to identify the video display monitor type to the graphics controller 200, with the bits being grouped into a plurality of bytes." *Id.* at 8:59-63. Monitor detection and identification operations according to one embodiment of the described invention are performed during "power up of the computer system." *Id.* at 8:15-18. These features enable the Schmidt system to achieve its principal object:

> The principal object of the present invention is to provide a method for communicating the performance capabilities of a video display monitor to the graphics controller of a computer system so as to allow the graphics controller to be .automatically configured to the capabilities reported by the video display monitor.
>
> *Id.* at 2:33-38.

Schmidt also explains that the communication between the graphics controller 200 of the computer system and the processors 104 and 106 of the monitor 100 is bi-directional. Specifically, signals sent by the graphics controller 200 cause the monitor 100 to enter a Parameter Response Mode (PRM). During PRM, identification and other information may be retrieved from monitor ROM 112 and communicated in a serial fashion to the graphics controller 200. The communicated information is used to automatically configure the graphics controller 200 for optimum interaction with the monitor 100. *Id.* at 8:40-11:52.

During the '457 reexamination, the Examiner held, and the board agreed, that Schmidt disclosed all of the limitations of claims 23, 25, and 27. These same limitations are repeated in claim 22.

E. Lien

U.S. Patent No. 5,386,567 ("Lien") (Ex. 1014) was filed on October 14, 1991 and issued on January 31, 1995. As such, Lien is prior art to the '970 Patent under 35 U.S.C. § 102(e). Lien discloses the basic concept of "plug and play" technology whereby information stored in a peripheral device (such as a display) is provided to a computer to allow the computer to determine the appropriate software to configure and utilize the peripheral device.

Lien addresses the problem of "hot plugging" devices into a computer, where it is desirable for a computer to be able to properly configure and interact with an attached device without the need to power off either the computer or the device, or both. Ex. 1014 at 1:18-49. Lien proposes including a memory (in the form of "attribute information storage") within an adapter of an attached device that includes an identification number for the device as well as other configuration information (such as driver information). *Id.* at 3:63-68; 5:17-35.

Lien further discloses that such an adapter can take the form of an LCD unit. *Id.* at 6:41-68; Figs. 10, 11; *see also id* at 6:61-68 ("Upon "hot plug" attachment to any of the display units, the resource manager in the system unit shown in these figures

would reconfigure as before, using attribute information and display driver information stored by the respective display unit, and the reconfigured system would then form a displayed image having over all dimensions and printed characters sized in accordance with attributes of the respective display unit."). Lien describes the "attribute information" as including an "identification number" of the adapter. *Id.* at 10:11-29 ("said attribute information includes an identification number of said adapter, information on an available interrupt level to be used by said adapter when interrupting said computer, an arbitration level to be used by said adapter for arbitrating for access to said bus, a direct memory access channel to be used for conveyance of data between said adapter and said memory subsystem, information on an I/O register which can be set by a program, address information on a memory on said adapter."). This ID is used to determine whether the display is of a type supported by the computer. *Id.* at 5:17-24.

F. Welk

U.S. Patent No. 4,549,172 ("Welk") (Ex. 1015) is titled "Multicolor Display From Monochrome or Multicolor Control Unit" and was filed on March 13, 1984 and issued on October 22, 1985. Thus, Welk is prior art to the '970 Patent under 35 U.S.C. § 102(b). Welk was not cited or considered during prosecution of the application that led to the '970 Patent. Nor has Welk been cited or considered during any of the pending reexaminations of the '970 Patent.

Welk addresses the problem of allowing a multicolor display to be used with either a monochrome or a multicolor computer control unit. Ex. 1015 at 2:25-29, 2:55-60. Welk discloses a color display (color display station 13) that receives display information from a remote video source (computer control unit 11). *Id.* at Abstract, 3:15-21. The color display includes a communication controller in the form of a microprocessor control circuit (MPU) 15 that receives video signal information from the computer control unit and provides corresponding display and control information to display circuitry. *Id.* at 3:45-60. In addition to receiving signals, the MPU 15 is capable of sending information to the computer control unit and is therefore capable of bi-directional communication with the computer control unit. *See id.* at 7:25-27 ("This ID data is supplied by the microprocessor 15 to the control unit 11.") The color display also includes a video circuit in the form a display format controller 18 and a control circuit 33, which together provide video signals to a display screen (cathode ray tube terminal (CRT) 14). *Id.* at 5:4-36.

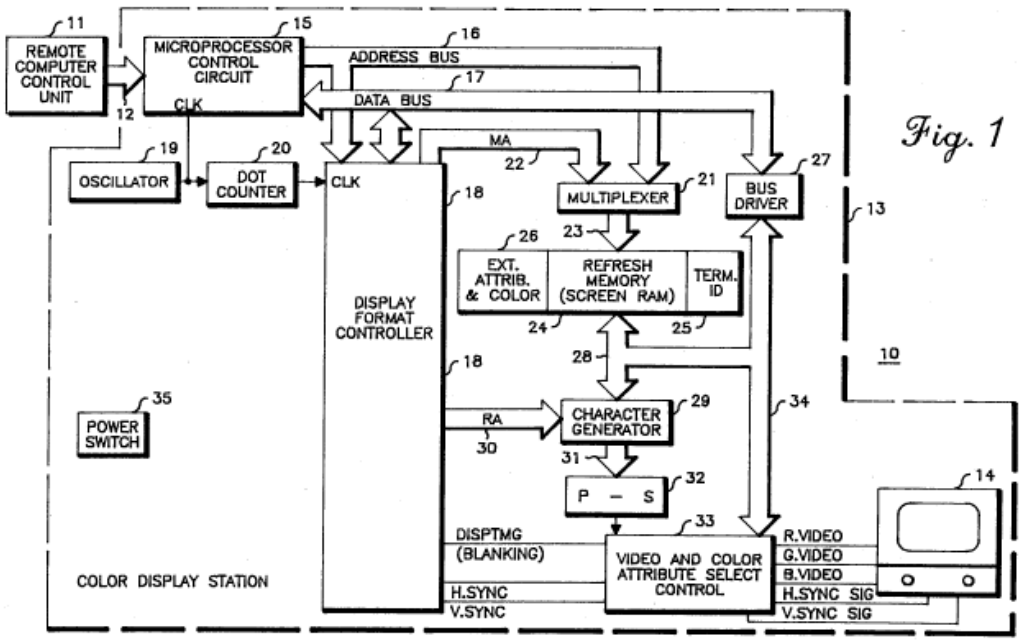


Fig. 1

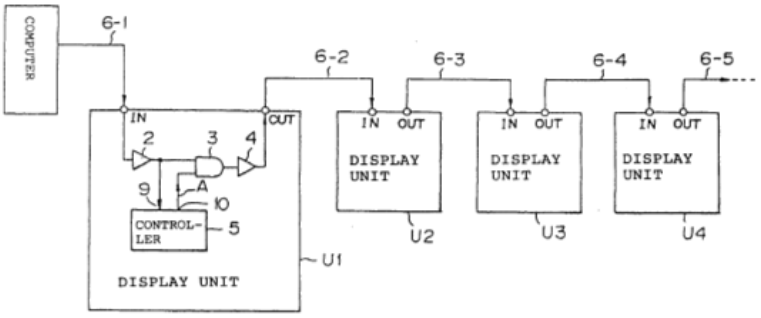
Welk further discloses that the display includes a memory (RAM 24) for storing display information, including "video character control signals." *Id.* at 4:16-36. This memory further includes a location (element 25) for storing a "terminal ID," that "identifies the type of display station." *Id.* at 4:37-44. The memory also includes an additional location (element 26) for storing "extended attributes" of the display. *Id.* at 4:44-53. Upon powering on, the MPU 15 in the display sends the display terminal ID information to the control unit. *Id* at 7:11-27. Using this ID information, the control unit is able to determine if it is connected to a color display and modifies its video control signals accordingly. *Id* at 7:28-36, 8:3-14; *see also id.* at Figs. 2a, 2b.

G. Satoru

European Patent Publication No. EP 0 498 995 A2 ("Satoru") (Ex. 1013) is titled "Data transfer control system" and was published on August 19, 1992. As such,

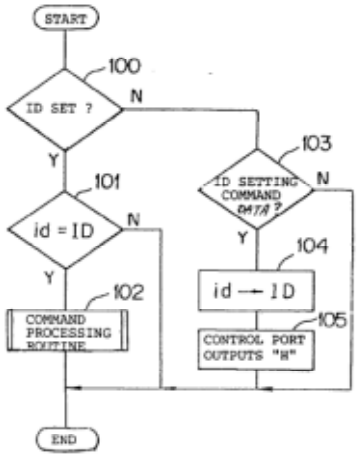
Satoru is prior art to the '970 Patent under 35 U.S.C. § 102(b). Satoru discloses a system that allows for the control of multiple displays from a central computer. Ex. 1013 at Abstract. In the system, each display is equipped with a controller that allow it to receive a unique identification code from a central computer. *Id.* at 4:2-5:7. An overview of the system is presented in Figure 1 of Satoru.

Fig. 1



After each display receives and stores its ID, the controller of the display compares the ID of any incoming commands to the ID code stored in memory. If the ID in the incoming commands matches the stored ID the command is implemented, if not it is ignored. *Id* at 1:26-38, 2:47-48, Fig. 5.

Fig. 5



Such commands include power on, power off, switch input to a video signal, switch input to a Y/C signal, white balance adjustment, and for selecting between an adjustment mode and a normal mode. *Id* at 3:51-4:1.

VIII. GROUNDS FOR UNPATENTABILITY OF EACH CLAIM

In light of the disclosures detailed below, the '970 Patent is unpatentable for at least the reasons summarized in the chart below and discussed in more detail herein.

Ground #	Ground	Prior art	Exhibit(s) #	Claims
1.	102(e)	Nadan	1009	22
2.	102(a)	Wasti	1010	22
3.	103(a)	Wasti	1010	22
4.	102(b)	Baji	1011	22
5.	102(e)	Lien	1014	22
6.	103(a)	Lien	1014	22
7.	103(a)	Schmidt in view of Satoru	1012, 1013	22

Ground #	Ground	Prior art	Exhibit(s) #	Claims
8.	103(a)	Satoru in view of Lien	1013, 1014	22
9.	103(a)	Satoru in view of Welk	1013, 1015	22

A. Ground 1: Claim 22 is Anticipated by Nadan

Nadan is directed to a system for networked transmission of video data between a networked computer called an encoder/transmitter and multiple displays, referred to as decoder-receivers.

Nadan discloses that video signals addressed to each decoder/receiver must be accompanied by a unique identifier. The decoder/receivers store video identifiers, and upon receiving video data, compare a unique identifier accompanying the video data with a stored video. Ex. 1009 at Abstract.

> It is a further object of the present invention to provide a financial information distribution system in which each video screen has a unique display identification code that is used to authorize viewing and/or to permission what input source information each individual video screen will be capable of displaying at any given time.

Id. at 3:38-44.

Additionally, Nadan discloses that a unique "polling ID" can be used for communication between a CPU associated with the encoder and the decoder/receivers.

> At installation, the host CPU 425 assigns a unique control bus address to each decoder. This address consists of a strand ID, which identifies the

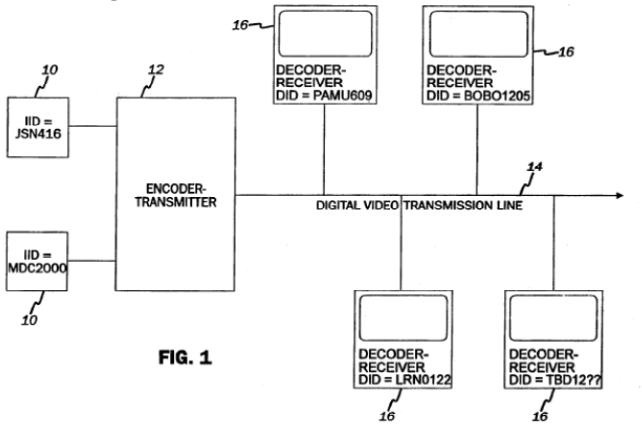
> RS-422 or 485 line to which the decoder is connected, and a 5-bit polling ID. The polling scheme allows the host CPU 425 to poll each decoder using a single byte, thus making the most frequently used signal the shortest length.

Id. at 36:39-45.

Solicitations for video signals from the decoder/receiver to the host CPU include a polling message, which itself includes the polling ID.

> Referring to FIG. 24B, each decoder responds to a host CPU 425 signal with either a solicitation message or, if no solicitation is ready, an idle message. Idle messages consist of a Seq element only (message bit=0). Solicitation messages consist of a Seq element (message bit= 1), **a poll element**, and one or more request frames. A request frame (R-Frame) contains one or more requests from either the host CPU 425 or the decoder 316….**As shown in FIG. 24E, bit 7 of the poll message is always set**. Since a poll message can originate from either the host CPU 425 or the decoder 316, bit 6 is used to indicate the source of the poll (0=Host, 1 =decoder). **The remaining six bits are the polling ID of the decoder** (1 to 63).
>
> *Id.* at 37:13-57 .

These solicitations are used to request video from the CPU or otherwise participate in bidirectional communication between the decoder/receiver and the CPU. *Id.* at 36:8-38.

U.S. Pat. No. 6,549,970	**Nadan (Ex. 1009)**
22. A method of communicating between a display unit and a video source from which video signals are sent to the display unit for display, the method comprising the steps of:	"A system for securely providing restricted display information having an encoder-transmitter for transmitting selected update data using information identification codes as enabling reception keys and a plurality of uniquely identified decoder-receivers for receiving the update data for display on a video screen." Ex. 1009 at Abstract. *See id.* at Fig. 1. *See also* Ex. 1002 at ¶¶ 164, 166.  FIG. 1
communicating display unit information stored in a memory of the display unit from the display unit to the video source,	"Referring to FIG. 24B, each decoder responds to a host CPU 425 signal with either a solicitation message or, if no solicitation is ready, an idle message. Idle messages consist of a Seq element only (message bit=0). **Solicitation messages consist of a Seq element (message bit= 1), a poll element, and one or more request frames.** A request frame (R-Frame) contains one or more requests from either the host CPU 425 or the decoder 316….As shown in FIG. 24E, bit 7 of the poll message is always set. **Since a poll message can originate from either the host CPU 425 or the decoder 316, bit 6 is used to indicate the source of the poll (0=Host, 1 =decoder). The remaining six bits are the polling ID of the decoder (1 to 63)**." Ex. 1009 at 37:13-57. *See also* Ex. 1002 at ¶¶ 164- 166.
wherein said display unit	"At installation, the host CPU 425 assigns a unique

U.S. Pat. No. 6,549,970	Nadan (Ex. 1009)
information includes an identification number for uniquely identifying the display unit; and	control bus address to each decoder. This address consists of a strand ID, which identifies the RS-422 or 485 line to which the decoder is connected, and a 5-bit polling ID. The polling scheme allows the host CPU 425 to poll each decoder using a single byte, thus making the most frequently used signal the shortest length." Ex. 1009 at 36:39-45. *See also* Ex. 1002 at ¶164.
sending a signal from the video source to the display unit, wherein said signal is generated based on the display unit information,	"Referring now to FIGS. 11 and 26, control bus 318 controls bi-directional communication between a decoder 316 (or a desk interface unit 321) and the system. Host CPU 425 may issue messages targeted to a specific decoder or to all decoders, or may request information from a specific decoder. A decoder will send a message to the host CPU 425 when requested by the host CPU 425. Typical uses of the control bus 318 from the host CPU 425 to decoders 316 are to poll a decoder 316 for a message, install a new decoder 316 on the system, update an LED display of a keyboard 319 at a decoder 316 and maintain the control bus protocol. **Typical uses of the control bus 318 from the decoder 316 to host CPU 425 are to transmit keyboard and/or mouse data (i.e., user requests for display information, or to define or move tiles),** report decoder malfunctions, and request system resources, e.g., DV bus 314 message retransmission due to a detected error in message sequences." Ex. 1009 at 36:8-26. *See also* Ex. 1002 at ¶165, 166.

U.S. Pat. No. 6,549,970	Nadan (Ex. 1009)
wherein information is bi-directionally communicated with the video source and the display unit.	"Referring now to FIGS. 11 and 26, control bus 318 controls bi-directional communication between a decoder 316 (or a desk interface unit 321) and the system. Host CPU 425 may issue messages targeted to a specific decoder or to all decoders, or may request information from a specific decoder. A decoder will send a message to the host CPU 425 when requested by the host CPU 425. Typical uses of the control bus 318 from the host CPU 425 to decoders 316 are to poll a decoder 316 for a message, install a new decoder 316 on the system, update an LED display of a keyboard 319 at a decoder 316 and maintain the control bus protocol. Typical uses of the control bus 318 from the decoder 316 to host CPU 425 are to transmit keyboard and/or mouse data (i.e., user requests for display information, or to define or move tiles), report decoder malfunctions, and request system resources, e.g., DV bus 314 message retransmission due to a detected error in message sequences." Ex. 1009 at 36:8-36. *See also* Ex. 1002 at ¶165, 166.

B. Ground 2: Claim 22 is anticipated by Wasti

As set forward in greater detail below, Wasti anticipates claim 22. Wasti discloses a networked system in which video is distributed to one or more connected displays. A central computer system (which acts as the externally connected computer) sends video to agent terminals. Each agent terminal includes a video controller that is connected to one or more displays (the video controller and its connected display acting as the claimed display units).

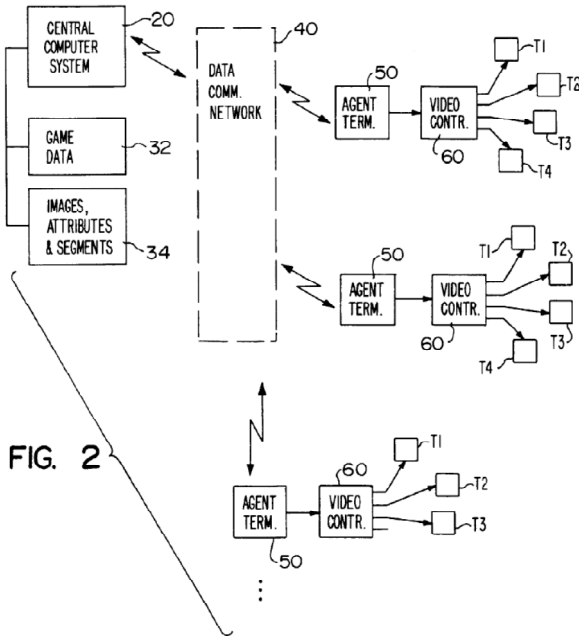


FIG. 2

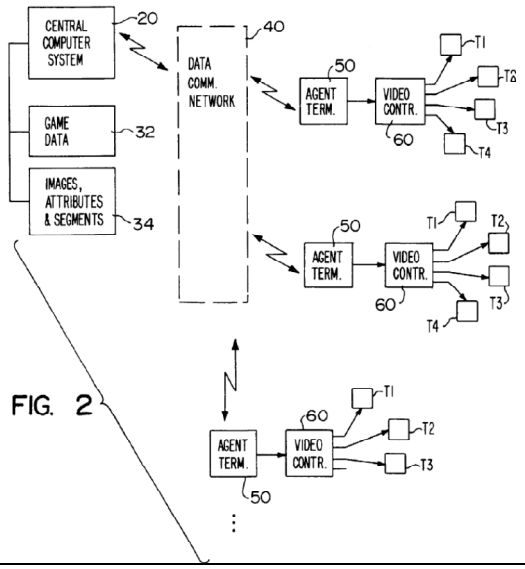
Ex. 1010 at Fig. 2.

As claimed in the '970 Patent the controllers/displays will only display video received from the central computer after comparing a received identifier with a previously stored identifier and determining that a match exists. *Id.* at 6:1-36. This enables the central computer to broadcast commands but only have them implemented by the desired controller/display combination. *Id.*

This communication is bidirectional and allows the controller/display combinations to send its identification information to the central computer as well. Particularly these communications include acknowledgements from the controller/display combinations, one of ordinary skill would understand that the central computer relies on these communications to determine whether to retry or otherwise change its interactions with the controller/display combinations. *Id.* at 6:1-

18, 6:26-49.

Petitioners note that the "display unit" of Wasti is the combination of a video controller and television receiver. The plain and ordinary meaning of "display unit" includes combinations of connected components that may not be in the same housing. Further, nothing in the '970 Patent requires or suggests that the functionality of the display unit must be included within a single housing. Ex 1001.

U.S. Pat. No. 6,549,970	**Wasti (Ex. 1010)**
22. A method of communicating between a display unit and a video source from which video signals are sent to the display unit for display, the method comprising the steps of:	"The video controller 60 of the invention, as shown in Fig. 1, includes a digital processor U1, for example Motorola microcomputer model MC68HC000, in data communication with a communications network via serial communications controller U7, and adapted to control generation of image signals to be displayed on a plurality of unmodified commercial television receivers T1-T4 via their composite video or antenna inputs." Ex. 1010 at 5:10-17. *See also id.* at Fig. 1; Ex. 1002 at ¶178, 179.  FIG. 2

U.S. Pat. No. 6,549,970	Wasti (Ex. 1010)
communicating display unit information stored in a memory of the display unit from the display unit to the video source,	"Communications along the serial communication path of serial controller U7, buffer U11 and port P5 are bidirectional. **Programmable logic array U8 stores an identification code unique to the particular controller 60, such as a serial number**, for use by a remote central computer communicating with the controller 60. Data received at controller 60 along the communication path can include an encoded identification code for comparison with the code stored in logic array U8, thus allowing the remote computer to address individual controllers 60 in this manner. Alternatively, **the identification code can be transmitted to the remote computer** together with acknowledgement of a transmission or with other data, allowing the remote computer uniquely to determine the source of a transmission it receives on communication channels open to a plurality of controllers 60. In a network including such identification it is not necessary for all the controllers to be identical or to be operated identically **because the remote computer can tailor transmissions to the controller, and interpret transmissions received from the controller**, in accordance with data stored at the remote computer relating to the character of the controller or the establishment in which it is located." Ex. 1010 at 6:26-49. *See also* Ex. 1002 at ¶¶179-181.
wherein said display unit information includes an identification number for uniquely identifying the display unit; and	"Communications along the serial communication path of serial controller U7, buffer U11 and port P5 are bidirectional. **Programmable logic array U8 stores an identification code unique to the particular controller 60, such as a serial number**, for use by a remote central computer communicating with the controller 60. Data received at controller 60 along the communication path can include an encoded identification code for comparison with the code stored in logic array U8, thus allowing the remote computer to address individual controllers 60 in this manner. Alternatively, **the identification code can be transmitted to the remote computer** together with

U.S. Pat. No. 6,549,970	Wasti (Ex. 1010)
	acknowledgement of a transmission or with other data, allowing the remote computer uniquely to determine the source of a transmission it receives on communication channels open to a plurality of controllers 60. In a network including such identification it is not necessary for all the controllers to be identical or to be operated identically **because the remote computer can tailor transmissions to the controller, and interpret transmissions received from the controller**, in accordance with data stored at the remote computer relating to the character of the controller or the establishment in which it is located." Ex. 1010 at 6:26-49. *See also* Ex. 1002 at ¶¶179-181.
sending a signal from the video source to the display unit, wherein said signal is generated based on the display unit information,	"Communications along the serial communication path of serial controller U7, buffer U11 and port P5 are bidirectional. Programmable logic array U8 stores an identification code unique to the particular controller 60, such as a serial number, for use by a remote central computer communicating with the controller 60. Data received at controller 60 along the communication path can include an encoded identification code for comparison with the code stored in logic array U8, thus allowing the remote computer to address individual controllers 60 in this manner. Alternatively, **the identification code can be transmitted to the remote computer together with acknowledgement of a transmission or with other data**, allowing the remote computer uniquely to determine the source of a transmission it receives on communication channels open to a plurality of controllers 60. In a network including such identification it is not necessary for all the controllers to be identical or to be operated identically **because the remote computer can tailor transmissions to the controller, and interpret transmissions received from the controller**, in accordance with data stored at the remote computer relating to the character of the controller or the establishment in which it is located." Ex. 1010 at 6:26-49. *See also* Ex. 1002 at ¶181.

U.S. Pat. No. 6,549,970	Wasti (Ex. 1010)
wherein information is bi-directionally communicated with the video source and the display unit.	**"Communications along the serial communication path of serial controller U7, buffer U11 and port P5 are bidirectional.** Programmable logic array U8 stores an identification code unique to the particular controller 60, such as a serial number, for use by a remote central computer communicating with the controller 60." Ex. 1010 at 6:26-31 . *See also* Ex. 1002 at ¶181.

C. Ground 3 : Claim 22 is obvious over Wasti standing alone

To the extent Wasti does not anticipate claim 22 it renders claim 22 obvious. As set forward above, Petitioner believes that the claimed "display unit" limitation should be construed to include combinations of displays and externally connected devices, and accordingly, Wasti anticipates claim 22. However, to the extent that "display unit" is construed to require a single integral display, it would have been obvious to combine the video controllers of Wasti with their connected displays to create a display having the functionality of the video controllers and displays in a single housing. Such an arrangement would reduce the need for external connections and/or separate power for each device. *See* Ex. 1002 at ¶186. *See* MPEP §2144 citing *In re Larson,* 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965) for the proposition that making prior art devices integral is obvious.

Additionally, as discussed above, one of ordinary skill in the art would understand that Wasti discloses that its central computer generates a signal based in part on the identifier and information transmitted from the video controllers. However, to the extent this feature is not disclosed it would be obvious to add.

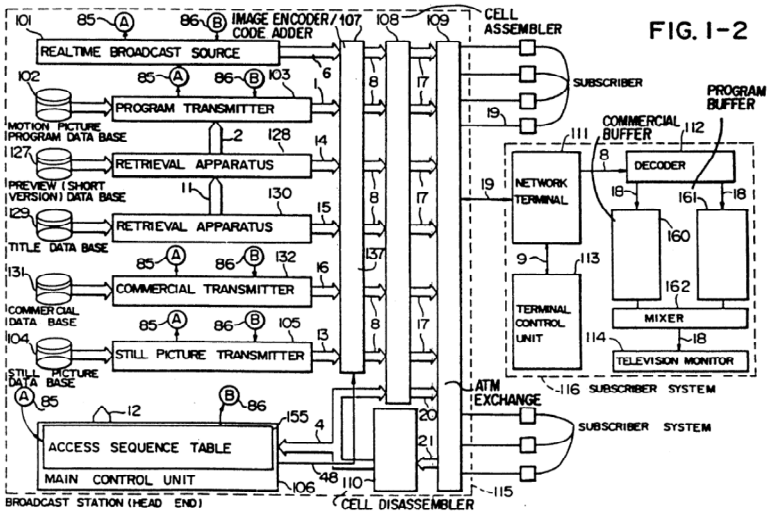
Wasti discloses that the identification code "can be transmitted to the remote computer together with acknowledgement of a transmission or with other data, allowing the remote computer uniquely to determine the source of transmission it receives on communication channels open to a plurality of controllers 60." *Id.* at 6:36-41. Wasti also discloses that in the remote computer encode the identification code to ***specifically address data sent to certain Display Controllers 60***. *Id.* at 6:28-36.

Accordingly, to the extent it is not disclosed, it would have been obvious for one of ordinary skill in the art to modify Wasti's use of unique identification code to first (1)send the code from the Video Controller 60 to the remote central computer 20; and then (2) use the received code to send specific data from the remote central computer 20 to the Video Controller 60. It would have been obvious for one of ordinary skill in the art to make the modification as Wasti discloses both capabilities of using the code, and it would make sense for the central computer 20 to first receive the code ***before*** using it to send data. Further, the motivated to make the modification is found in Wasti itself. Ex. 1002 at ¶¶187-190. As discussed previously, Wasti discloses the need to present different data to different display terminals (*see id.*

at 3:2-28) and the identification of those display terminals.

D. Ground 4: Claim 22 is Anticipated by Baji

Baji discloses each and every element of 22 of the '970 Patent. Baji discloses a display unit in the form of subscriber system 116, as shown in Fig. 1-2 (shown below).



Subscriber system 116 includes a television monitor 114 for displaying videos and images. Ex. 1011 at 1:67-68, Fig. 1-2. Baji also describes a terminal control unit 113 capable of displaying on television monitor 114 video signals sent by head end 115. *Id.* at 1:62-2:3, 2:37-49; Fig. 1-2, 4.

Baji also discloses a memory containing display unit information. In particular, Baji discloses that the subscriber system 116 contains memory (*e.g.*, memory modules 139, 140, 160, 161, and 166). *Id.* at 10:20-23, 12:35-46; Figs. 1-2, 15. Baji further discloses that the subscriber unit transmits requests for desired programs and desired

advertisement information to the head-end. *Id.* at 4:13-18. As described in Baji, these requests include a unique identification code for the subscriber unit. *Id.* at 14:17-29; *see also id.* at Fig. 18B (showing up-link communications—from the subscriber unit to the head end—containing terminal identification codes 96, which must be stored in a memory in the subscriber). Because the subscriber unit 116 transmits messages that include the subscriber unit's ID code, a person of ordinary skill in the art would understand this information must be stored in a memory on the subscriber system 116. Ex. 1002 at ¶200.

Other disclosures in Baji show that the subscriber ID code is stored in a memory on the subscriber system. For example, Baji discloses a subscriber code used as input to access table 155 of head unit 115. Ex. 1011 at 9:64-66, Fig. 12; *see also id.* at 4:58-64 (describing different video data sent to three different subscribers). The subscriber code uniquely identifies each subscriber from the others because head unit 115 transmits different video data to different subscribers based on their preferences. *Id.* at 4:58-64; Figs. 10, 12. Because Baji describes the subscriber code as an input for signal generation in head end 115 (*id.* at 9:64-66), this information must exist in memory on subscriber system 116. Ex. 1002 at ¶201.

Baji further discloses a bi-directional communication controller that communicates the unique identification number to the video source and that the video source creates a return signal based on receipt of the unique identification

number. Each of Baji's subscriber systems "includes a network terminal 111 for supervising an interface with the head unit 115." Ex. 1011 at 1:62-64, Fig. 1-2. Baji's subscriber systems 116 communicate display unit information (*e.g.*, subscriber codes and desired program/advertisement preferences) to broadcast station 115 via network terminal 111. *Id.* at 4:13-18, 4:58-64, 8:61-9:2, 9:64-66, Fig. 1-2. In response, subscriber system 116 receives a signal from broadcast station 115 based on comparing the subscriber code with an access sequence table 155 stored in main control unit 106 of broadcast station 115. *Id.* at 8:11-15, 8:61-9:2, 9:64-66; *see id.* at 3:64-4:11 (Table 1), 4:58-64 (describing different video signals sent to three different subscribers based on subscriber code).

U.S. Pat. No. 6,549,970	**Baji (Ex. 1011)**
22. A method of communicating between a display unit and a video source from which video signals are sent to the display unit for display, the method comprising the steps of:	"A subscriber system 116 disposed for each subscriber includes a network terminal 111 for supervising an interface with the head end 115 so as to achieve the assemble and disassemble operations of cells, a decoder 112 for decoding the encoder or coded video signal 8 (through a bandwidth compression), a television monitor 114, and a terminal controller 113 for controlling the constituent elements above and for communicating control information of the broadcast station with the subscriber." Ex. 1011 at 1:62-2:3. "On the other side, there are disposed subscriber systems 120 each including a directional filter 121 for transmitting a down-link signal such as the broadcast signal to a receiver 123 and for bidirectionally transmitting a terminal control signal 8, a modulator/demodulator 122 for modulating and for demodulating the terminal control signal 8, a terminal

U.S. Pat. No. 6,549,970	Baji (Ex. 1011)
	controller 124 for producing control information such as a channel selection and up-link control information (for example, enquiry for a charging state and questionnaire about a program), a receiver 123 for demodulating the broadcast signal to obtain a program video signal of a baseband, and a television monitor 114." *Id.* at 2:37-49; Figs. 1-2, 4. *See also* Ex. 1002 at ¶199.
communicating display unit information stored in a memory of the display unit from the display unit to the video source,	"The subscribers transfers a desired program and desired advertisement information via the broadband transmission line 19 to the head end. The transferred information items are received by the main controller 106 of the head end so as to control the program transmitter 103 and the advertisement transmitter 132." Ex. 1011 at 4:13-18. "On the other side, there are disposed subscriber systems 120 each including a directional filter 121 for transmitting a down-link signal such as the broadcast signal to a receiver 123 and for bidirectionally transmitting a terminal control signal 8, a modulator/demodulator 122 for modulating and for demodulating the terminal control signal 8, a terminal controller 124 for producing control information such as a channel selection and up-link control information (for example, enquiry for a charging state and questionnaire about a program), a receiver 123 for demodulating the broadcast signal to obtain a program video signal of a baseband, and a television monitor 114." *Id.* at 2:37-49. "This configuration includes a commercial buffer 160 and a program buffer 161 in which each buffer is a 2-port memory capable of independently achieving write and read operations." *Id.* at 10:20-23. "As an input address for the table 155, there is employed a subscriber code and a commercial insertion

U.S. Pat. No. 6,549,970	Baji (Ex. 1011)
	point serial number." *Id.* at 9:64-66. *See id.* at Figs. 1-2, 15. *See also* Ex. 1002 at ¶¶200-202.
wherein said display unit information includes an identification number for uniquely identifying the display unit; and	"The subscribers transfers a desired program and desired advertisement information via the broadband transmission line 19 to the head end. The transferred information items are received by the main controller 106 of the head end so as to control the program transmitter 103 and the advertisement transmitter 132. Ex. 1011 at 4:13-18. "As an input address for the table 155, there is employed a subscriber code and a commercial insertion point serial number." *Id.* at 9:64-66. "As an input address for the table 155, there is employed a subscriber code and a commercial insertion point serial number. Data to be set include a commercial associated with each commercial insertion point or a classification code of video data, an identification code, a commercial mixing mode, and commercial insertion coordinates." *Id.* at 9:64-10:2. "The channel dedicated to up-link control information is used by a subscriber to transfer a desired program and a desired commercial information item to the broadcast station or head end 117. Based on the information items thus received by means of the main control unit 118, the head end 117 controls a program transmitter 103 and a commercial transmitter 132. FIG. 18B shows the configuration of the information packet, which comprises a terminal identification code 96 and a request information item 97. If necessary, at least the terminal identification code 96 is uniquely and hieroglyphically coded so as to prevent the other viewers from freely issuing a up-link request." Ex. 1011 at 14:16-29.

U.S. Pat. No. 6,549,970	Baji (Ex. 1011)
	See id. at Figs. 1-2, 15. *See also* Ex. 1002 at ¶¶200-202.
sending a signal from the video source to the display unit, wherein said signal is generated based on the display unit information,	"The subscribers transfers a desired program and desired advertisement information via the broadband transmission line 19 to the head end. The transferred information items are received by the main controller 106 of the head end so as to control the program transmitter 103 and the advertisement transmitter 132." Ex. 1011 at 4:13-18. "On the other hand, each commercial is sent, before the insertion thereof, to the pertinent subscriber according to the data base/commercial correspondence table 155. For the subscriber "a", there are transmitted two frames of commercials via the channels 4 and 5, respectively. On receiving these program and commercial cells, the subscriber system 116 decodes the contents thereof by means of a decoder 112 so as to respectively record the resultant signals in the program buffer 161 and the commercial buffer 160." *Id.* at 8:61-9:2. "The channel dedicated to up-link control information is used by a subscriber to transfer a desired program and a desired commercial information item to the broadcast station or head end 117. Based on the information items thus received by means of the main control unit 118, the head end 117 controls a program transmitter 103 and a commercial transmitter 132. FIG. 18B shows the configuration of the information packet, which comprises a terminal identification code 96 and a request information item 97. If necessary, at least the terminal identification code 96 is uniquely and hieroglyphically coded so as to prevent the other viewers from freely issuing a up-link request." *Id.* at 14:16-29. *See also* Ex. 1002 at ¶¶200-202.

U.S. Pat. No. 6,549,970	Baji (Ex. 1011)
wherein information is bi-directionally communicated with the video source and the display unit.	"The configuration includes a head end 115, which comprises an advertisement data base 131 for effecting a sophisticated advertisement processing and a program broadcast apparatus 103 for appropriately accessing the data base 131 and a program data base so as to insert an advertisement desired by the subscriber into a program desired by the subscriber, and an advertisement transmit apparatus 132. The desired program and advertisement are transmitted via an ATM exchange 108 to the subscriber." Ex. 1011 at 3:42-51. *See also* Ex. 1002 at ¶. *See also* Ex. 1002 at ¶¶200-202.

E. Ground 5 : Claim 22 is Anticipated by Lien

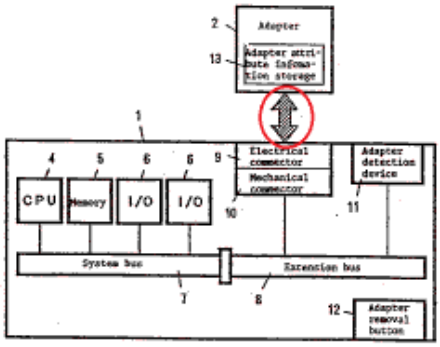
As set forward in greater detail below, Lien anticipates claim 22. Lien discloses a display unit (*e.g.*, adapter 2 in the form of LCD display units 23, 24) for displaying an image based on video signals inputted from an externally connected video source (*e.g.*, portable computer 1, in the form of system unit 22). Ex. 1014 6:41-50, 7:1-3.

Lien discloses a memory in the form of attribute information store 13, which stores display unit information such as an adapter identity (ID) information and other "attribute information." *Id.* at 3:63-68 ("The adapter contains an attribute information store 13, and a not-shown logical functional block associated with the adapter operations (for example, a memory block in the case of a memory adapter). Attribute information store 13 stores adapter identity (ID) information and other information.").

In addition, Lien discloses communicating information stored in the memory over a bi-directional communication link, in that Lien specifically discloses bi-

directional communications between the adapter in the display and the video source (*i.e.*, the computer) based on transmission of an identifier. In particular, Lien shows if Figure 2 that the adapter and computer engage in bi-directional communication:

[Figure 2]



Id. at Fig. 2, annotated. Lien repeatedly discloses that information in the display adapter is sent to the computer. *See*, *e.g.*, *id.* at Abstract ("attribute information stored by the adapter is read out to the computer"); 5:17-24 (noting that the adapter's ID and attribute information are sent to the computer). In addition, Lien repeatedly discusses how the display adapter and computer "exchange" signals "between" one another. *See*, *e.g.*, *id.* at 8:21-33 ("said information signals exchanged with each said inserted adapter . . ."); 9:53-55 ("signal transfer conductors for conveying signals between said respective adapter and said computer via said expansion slot"); 11:16-18 ("connecting said expansion adapter and said slot for interchange of information signals in response to detecting said insertion"); 11:19-21 ("exchanging predetermined information between said inserted adapter and said computer, via said slot, in response to detecting said insertion").

Lien further discloses that the display unit information that is stored in the memory and is communicated to the video source includes an identification number for uniquely identifying the display unit. In particular, Lien discloses that the "[a]ttribute information store 13 stores adapter identity (ID) information." *Id.* at 3:63-68; *see also id.* at 10:11-12. Lien makes clear that this information is unique to the particular adapter, noting that "[a]fter completion of mechanical and electrical connections, **the adapter's identity ID** is read out (from the adapter's attribute information, FIG. 2) and checked to determine whether or not the adapter is of a type supported for connection in this manner (steps S4 and S5)" (*id.* at 5:17-21) and that "said **attribute information stored by each inserted adapter includes an identification number of the respective adapter** . . . ." (*id.* at 8:19-21) .

U.S. Pat. No. 6,549,970	**Lien (Ex. 1014)**
22. A method of communicating between a display unit and a video source from which video signals are sent to the display unit for display, the method comprising the steps of:	"FIGS. 10 and 11 show a portable computer system formed by connecting a system unit 22 with modular LCD (liquid crystal display) units 23, 24 of different sizes; e.g. for displaying images (or portions of images) with various magnifications." Ex. 1014 at 6:41-45. *See also* Ex. 1002 at ¶205.
communicating display unit information stored in a memory of the display unit from the display unit to the video source,	"Thereafter, attribute information stored by the adapter is read out to the computer and the computer conducts a setup process to modify its configuration information to establish proper communication levels and addresses for the adapter commensurate with then active resources of the system." Ex. 1014 at Abstract. *See also* Ex. 1002 at ¶¶ 206-209.
wherein said display unit	""After completion of mechanical and electrical

U.S. Pat. No. 6,549,970	Lien (Ex. 1014)
information includes an identification number for uniquely identifying the display unit; and	connections, **the adapter's identity ID** is read out (from the adapter's attribute information, FIG. 2) and checked to determine whether or not the adapter is of a type supported for connection in this manner (steps S4 and S5)." Ex. 1014 at 5:17-21 . "…said **attribute information stored by each inserted adapter includes an identification number of the respective adapter** . . . ." Ex. 1014 at 8:19-21 . *See also* Ex. 1002 at ¶¶ 206-209.
sending a signal from the video source to the display unit, wherein said signal is generated based on the display unit information,	"After completion of mechanical and electrical connections, the adapter's identity ID is read out (from the adapter's attribute information, FIG. 2) and checked to determine whether or not the adapter is of a type supported for connection in this manner (steps S4 and S5)." Ex. 1014 at 5:17-21. "connecting said expansion adapter and said slot for interchange of information signals in response to detecting said insertion" *Id.* at 11:16-18. "exchanging predetermined information between said inserted adapter and said computer, via said slot, in response to detecting said insertion" *Id.* at 11:19-21. "…directing said computer system to perform a predetermined sequence of reconfiguring functions relative to the system formed by the computer system and expansion adaptors of various types attached to said expansion slots…" *Id.* at 12:13-18. *See also id.* at Abstract, Fig. 7; Ex. 1002 at ¶¶ 206-209.

U.S. Pat. No. 6,549,970	Lien (Ex. 1014)
wherein information is bi-directionally communicated with the video source and the display unit.	"Thereafter, attribute information stored by the adapter is read out to the computer and the computer conducts a setup process to modify its configuration information to establish proper communication levels and addresses for the adapter commensurate with then active resources of the system." Ex. 1014 at Abstract. "means responsive to detection of insertion of a said adapter, into a said formerly empty one of said slots, for controlling the adapter inserted into said formerly empty slot to exchange information signals with said computer system, including information signals representing attribute information stored by said inserted adapter." *Id.* at 7:39-45; *see also id.* at Fig. 2; Ex. 1002 at ¶¶ 206-209.

F. Ground 6: Claim 22 is obvious over Lien standing alone

As set forward in greater detail above, Lien discloses all the limitations of claim 22. However, to the extent it is found that Lien's adaptor ID number does not uniquely identify the display unit, it still would have been obvious to one of ordinary skill in the art to modify Lien's ID number to allow it to uniquely identify the display unit. Ex 1002 at ¶¶ 211-212. One of ordinary skill in the art would be motivated to make the modification for the purpose of not only identifying the type/model of adaptor for initial configuration and "hot-plugging" but also for the purpose of identifying the specific adaptor among similar adaptors for repairs, usage, upgrades, and/or replacements. For example, in a situation where multiple adaptors are being used (*e.g.*, multiple displays of the same model on a network), a user or manufacturer would be able to determine if a specific adaptor needs maintenance, replacement, or

additional attention. Ex 1002 at ¶¶ 211-212. In addition, it would have been obvious to one of ordinary skill in the art to modify the ID in Lien to uniquely identify the display unit in order to allow the video source to configure its video signals based on the specific display in order to take into different configuration settings that might be stored on adapters of the same type.

G. Ground 7 : Claim 22 is obvious over Schmidt in view of Satoru

As set forward in greater detail below, Schmidt and Satoru render claim 22 obvious. Schmidt discloses a display system where a display sends display identification information to a graphics controller and the graphics controller configures itself according to the received information so that it can generate signals compatible with the display. Ex. 1012 at Abstract, 2:60-3:3. The communications link of Schmidt is bidirectional and enables the graphics controller to solicit configuration information from the display. *Id.* at 8:40-11:52. For this reason, Schmidt was found by the Board to disclose all of the limitations of 22 other than a unique identifier. Petitioner notes that during the '457 reexamination claim 18, which is substantially similar to claim 22, except for the unique identifier, was held anticipated by Schmidt. '457 Reexamination History at January 23, 2015 Notice of Intent to Issue Reexam Certificate.

Satoru discloses a system that allows for the control of multiple displays from a central computer. Ex. 1013 at Abstract. In the system, each display is equipped with

components that allow it to receive a unique identification code from a central computer. *Id.* at 4:2-5:7. After each display receives and stores its ID, it can, through the use of a controller, thereafter accept and implement control instructions from the computer based on whether or not the ID code in the transmission corresponds to the ID code of the display. *Id.* at 1:26-38, 4:49-57, Fig. 5.

With respect to claim 22, it would be obvious to add Satoru's disclosure of a unique identifier to the information provided by the display of Schmidt to a connected computer. Ex. 1002 at ¶243. Doing so would streamline the process by allowing the Schmidt system to provide a single identifier rather than more complicated configuration information. It would also allow the system of Schmidt to keep a preferred resolution associated with a particular display for the next time that the display is used and to support simultaneous control of multiple displays. Petitioner notes that during the '457 reexamination, claim 18, which is substantially similar to claim 22, except for the unique identifier, was held anticipated by Schmidt. '457 Reexamination History at January 23, 2015 Notice of Intent to Issue Reexam Certificate. Petitioner further notes that in related Reexamination Control No. 90/013,237 the Examiner found that one of ordinary skill would be motivated to combine Schmidt and Satoru. Reexamination Control No. 90/13,237 at March 9, 2015 Office Action, pp. 13-14.

U.S. Pat. No. 6,549,970	Schmidt (1012) and Satoru (Ex. 1013)
22. A method of communicating between a display unit and a video source from which video signals are sent to the display unit for display, the method comprising the steps of:	**Schmidt** "An apparatus for determining a plurality of video signal characteristics including analog video frequency, horizontal sync frequency and vertical sync frequency produced by a graphics controller providing the video signal to a video display monitor, includes a memory storing bits which correspond to a set of operating characteristics of the video display monitor, a first circuit coupled to the memory for producing voltage fluctuations on a line based on the stored bits in response to a signal which corresponds to a command to set the characteristics of the video signal provided to the video display monitor, and a second circuit for sensing the voltage fluctuations so as to permit determination of the set of operating characteristics." Ex. 1012 at Abstract. *See also* Ex. 1002 at ¶¶94, 95, 241.
communicating display unit information stored in a memory of the display unit from the display unit to the video source,	**Schmidt** "According to another aspect of the present invention, the first circuit comprises a memory storing a plurality of bits corresponding to the characteristics of the video display monitor, and the memory outputs the bits responsive to changes in a selected characteristic of a horizontal sync signal corresponding to the second signal. The selected characteristic may be polarity. The first circuit advantageously can further comprise a switch operatively coupled to a video line of the video display monitor and to ground so as to permit grounding of the video line in response to the bits output by the memory. In addition, the second circuit comprises a logic element for detecting the bits." Ex. 1012 at 4:32-44. "When monitor 100 enters PRM, the microprocessor 106 waits for receipt of the next vertical sync pulse.

U.S. Pat. No. 6,549,970	Schmidt (1012) and Satoru (Ex. 1013)
	After the vertical sync pulse is detected, the microprocessor 106 outputs a plurality of bits, with one bit being output for each horizontal sync signals received. It will be apparent that each bit must be stable until the next horizontal sync pulse so that the graphics controller 200 has sufficient time to read the bit. Preferably, one bit is output every 25 microseconds (μs), which advantageously is adequate time for graphics controller 200 to sample each bit. It will be appreciated that memory 112 of monitor 100 includes the plurality of bits used to identify the video display monitor type to the graphics controller 200, with the bits being grouped into a plurality of bytes." *Id.* at 8:48-63. *See also* Ex. 1002 at ¶¶ 94, 95, 241.
wherein said display unit information includes an identification number for uniquely identifying the display unit; and	**Satoru** "Specific ID codes are preassigned to the respective display units U1-U4, and an ID code included in transmission data from the computer 1 is decoded by each display unit….In this example, each of the display units U1-U4 must be provided with setting switches and a memory such as ROM for setting and storing its own ID code, respectively." Ex. 1013 at 1:28-38. *See also* Ex. 1002 at ¶¶98, 242.
sending a signal from the video source to the display unit, wherein said signal is generated based on the display unit information, wherein information is bi-directionally communicated with the video source and the display unit.	**Schmidt**: "When monitor 100 enters PRM, the microprocessor 106 waits for receipt of the next vertical sync pulse. After the vertical sync pulse is detected, the microprocessor 106 outputs a plurality of bits, with one bit being output for each horizontal sync signals received. It will be apparent that each bit must be stable until the next horizontal sync pulse so that the graphics controller 200 has sufficient time to read the bit. Preferably, one bit is output every 25 microseconds (μs), which advantageously is adequate time for graphics controller 200 to sample each bit. **It will be appreciated that memory 112 of monitor**

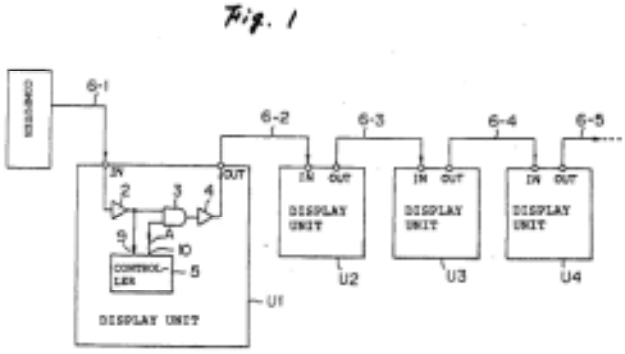
U.S. Pat. No. 6,549,970	Schmidt (1012) and Satoru (Ex. 1013)
	100 includes the plurality of bits used to identify the video display monitor type to the graphics controller 200, with the bits being grouped into a plurality of bytes." Ex. 1012 at 8:48-63 . "The present invention was motivated by a desire to provide a method and apparatus for communicating the capabilities of a video display monitor to a graphics controller so as to permit automatic determination of the optimal refresh rate used by the graphics controller. In order to determine which refresh rate the graphics controller is to use, the BIOS need three pieces of information, maximum horizontal sync frequency, maximum vertical sync frequency and maximum video bandwidth. With this information, the BIOS can automatically determine the best timing requirements for the graphics controller." *Id.* at 2:60-3:3. *See also* Ex. 1002 at ¶¶ 94, 95, 241..

H. Ground 8: Claim 22 is obvious over Satoru in view of Lien

As discussed above Satoru discloses a system that allows for the control of multiple displays from a central computer. Ex. 1013 at Abstract. In the system, each display is equipped with components that allow it to receive a unique identification code from a central computer. *Id.* at 4:2-5:7.

As described above Lien discloses a system that can communicate bi-directionally with a connected display by requesting and receiving configuration, including an identifier from a connected adapter such as a display unit. Ex. 1014 at 6:41-68; Figs. 10, 11; *see also id.* at 6:61-68, 5:17-24.

It would be obvious to one of ordinary skill to combine the bidirectional communication and automatic configuration capabilities of Lien with the display system of Satoru. Ex. 1002 at ¶217. Such a combination would enable the system of Satoru to automatically obtain configuration and compatibility information for newly connected devices.

U.S. Pat. No. 6,549,970	**Satoru (Ex. 1013) and Lien (Ex. 1014)**
22. A method of communicating between a display unit and a video source from which video signals are sent to the display unit for display, the method comprising the steps of:	**Satoru** Ex. 1013 at Fig. 1.  "The display unit U1 includes: a buffer amplifier 2 for amplifying a level of transmission data received via an input terminal IN; a controller 5 in the form of a microprocessor for controlling the entire display unit U1 based on the transmission data provided via an input port 9; an AND gate 3 for controlling transfer of the transmission data output from the buffer amplifier 2 based on a transfer permission signal A output from an control port of the controller 5; and a buffer amplifier 4 for providing, after amplification, the transmission data output from the AND gate 3 to an output terminal OUT." *Id.* at 3:14-26. *See also* Ex. 1002 at ¶¶97, 214-215.

U.S. Pat. No. 6,549,970	Satoru (Ex. 1013) and Lien (Ex. 1014)
	Lien *See* Ground 5 at corresponding limitation. *See also* Ex. 1002 at ¶¶ 206-209.
communicating display unit information stored in a memory of the display unit from the display unit to the video source,	**Lien** *See* Ground 5 at corresponding limitation. *See also* Ex. 1002 at ¶¶ 206-209.
wherein said display unit information includes an identification number for uniquely identifying the display unit; and	**Satoru** "Specific ID codes are preassigned to the respective display units U1-U4, and an ID code included in transmission data from the computer 1 is decoded by each display unit….In this example, each of the display units U1-U4 must be provided with setting switches and a memory such as ROM for setting and storing its own ID code, respectively." Ex. 1013 at 1:28-38. *See also* Ex. 1002 at ¶¶98, 214-215. **Lien** *See* Ground 5 at corresponding limitation. *See also* Ex. 1002 at ¶¶ 206-209.
sending a signal from the video source to the display unit, wherein said signal is generated based on the display unit information,	**Lien** *See* Ground 5 at corresponding limitation. *See also* Ex. 1002 at ¶¶ 206-209.
wherein information is bi-directionally communicated with the video source and the display unit.	**Lien** *See* Ground 5 at corresponding limitation. *See also* Ex. 1002 at ¶¶ 206-209.

I. Ground 9: Claim 22 is obvious over Satoru in view of Welk

As discussed above Satoru discloses a system that allows for the control of multiple displays from a central computer. Ex. 1013 at Abstract. In the system, each display is equipped with components that allow it to receive a unique identification code from a central computer. *Id.* at 4:2-5:7.

Welk discloses a display that can communicate bi-directionally with a connected controller by providing configuration information in response to a read attempt and additionally receiving video controls in return. Ex. 1015 at 7:11-27, Fig. 1. Particularly, Welk discloses that the display includes a memory (RAM 24) for storing display information, including "video character control signals." *Id.* at 4:16-36. Welk includes a location (element 25) for storing a "terminal ID" that "identifies the type of display station." *Id.* at 4:37-44. The memory also includes an additional location (element 26) for storing "extended attributes" of the display. *Id.* at 4:44-53. Upon powering on, the MPU 15 in the display sends the display terminal ID information to the control unit. *Id.* at 7:11-27. The control unit uses this information and determines if it is connected to a color display and modifies its video control signals accordingly. *Id.* at 7:28-36, 8:3-14; *see also id.* at Figs. 2a, 2b. Accordingly, Welk discloses bi-directional communication between the display and a connected video source.

It would be obvious to one of ordinary skill to combine the bidirectional communication and automatic configuration capabilities of Welk with the display system of Satoru. Ex. 1002 at ¶231. Such a combination would enable the system of Satoru to automatically obtain configuration and compatibility information for newly connected devices.

U.S. Pat. No. 6,549,970	**Satoru (Ex. 1013) and Welk (Ex. 1015)**
22. A method of communicating between a display unit and a video source from which video signals are sent to the display unit for display, the method comprising the steps of:	**Satoru** *See* Ground 8 at corresponding limitation. **Welk** "A preconverged color display station is disclosed which is compatible with a computer controlled control unit that provides electrical convergence control signals." Ex. 1015 at Abstract. "FIG. 1 illustrates a display information system 10 in which a remote computer control unit 11 is contemplated as supplying display information via a coaxial cable 12 to a color display station 13 (shown dashed) which includes a CRT (cathode ray tube terminal) 14 and a programmed microprocessor control circuit (MPU) 15." *Id.* at 3:15-21. *See id.* at Fig. 1. *See also* Ex. 1002 at ¶¶ 106, 229.
communicating display unit information stored in a memory of the display unit from the display unit to the video source,	**Welk** "In addition to having the character information storage capabilities described above, the refresh memory screen RAM 24 can also be considered as contaning (sic) one fixed storage location 25 which contains data that identifies the type of display station (terminal) corresponding to the display station 13. This terminal ID location 25 could alternatively

U.S. Pat. No. 6,549,970	Satoru (Ex. 1013) and Welk (Ex. 1015)
	consist of a storage location contained in the microprocessor control circuit 15. In addition, the refresh memory screen RAM 24 also has additional storage capability locations 26 for storing extended attributes including extended color control signals which would include storing control data for implementing the selection of colors in addition to the basic colors of red, green, blue and white. It should be noted that the extended attributes, in addition to extended color, may comprise underline, reverse video, blinking and programmable symbol selection. It is contemplated that these extended attribute and color select locations 26 contain stored control data only when such extended data is sent by the control unit 11 through the MPU 15 to the screen RAM 24. It should be noted that if the control unit 11 does not identify the color display station 13 as being compatible, no extended color attribute data will be sent to the MPU 15, and therefore no extended color selection will be possible." Ex. 1015 at 4:37-61. "The above operation for color selection is illustrated by the initializing power on step 50 in the flowchart in FIGS. 2a and 2b which step is then followed by the process step 51. After implementing the process step 51, information flow passes to a process block 52 wherein the display station identification (ID) code is effectively read by the control unit 11. This essentially corresponds to the microprocessor 15 reading out data, in response to a command from the control unit 11, from a designated storage location (location 25) wherein this data identifies to the control unit 11 the type of display station that the control unit 11 is connected to. To insure compatibility with the IBM 3270 system, the ID data stored in location 25 corresponds to data identifying the display station 13 as an IBM 3279 display station. This ID data is supplied by the microprocessor 15 to the control unit

U.S. Pat. No. 6,549,970	Satoru (Ex. 1013) and Welk (Ex. 1015)
	11." *Id.* at 7:11-27. *See also* Ex. 1002 at ¶¶106-108, 229-230.
wherein said display unit information includes an identification number for uniquely identifying the display unit; and	**Satoru** *See* Ground 8 at corresponding limitation.
sending a signal from the video source to the display unit, wherein said signal is generated based on the display unit information,	**Welk** "The above operation for color selection is illustrated by the initializing power on step 50 in the flowchart in FIGS. 2a and 2b which step is then followed by the process step 51. After implementing the process step 51, information flow passes to a process block 52 wherein the display station identification (ID) code is effectively read by the control unit 11. This essentially corresponds to the microprocessor 15 reading out data, in response to a command from the control unit 11, from a designated storage location (location 25) wherein this data identifies to the control unit 11 the type of display station that the control unit 11 is connected to. To insure compatibility with the IBM 3270 system, the ID data stored in location 25 corresponds to data identifying the display station 13 as an IBM 3279 display station. This ID data is supplied by the microprocessor 15 to the control unit 11. // From the process block 52, information passes to a decision block 53 wherein the computer control unit 11 determines if the control unit 11 is a color control unit and if the control unit is connected to a proper color display station. If either the control unit 11 is not a color control unit, or if the control unit 11 determines that the display station identification does not correspond to a proper color display station ID, then the process flow directly proceeds to a terminal 54. . . . In the present invention, if the decision block 53 determines that the control unit 11 is a color

U.S. Pat. No. 6,549,970	Satoru (Ex. 1013) and Welk (Ex. 1015)
	control unit, and that the color control unit is connected to what it believes to be a proper color display station, then information flow passes to a process block 60 which corresponds to the control unit 11 transmitting electrical convergence data via the cable 12 to the display station 13." Ex. 1015 at 7:11-8:10. *See also* Ex. 1002 at ¶¶106-108, 229-230.
wherein information is bi-directionally communicated with the video source and the display unit.	**Welk** "The above operation for color selection is illustrated by the initializing power on step 50 in the flowchart in FIGS. 2a and 2b which step is then followed by the process step 51. After implementing the process step 51, information flow passes to a process block 52 wherein the display station identification (ID) code is effectively read by the control unit 11. This essentially corresponds to the microprocessor 15 reading out data, in response to a command from the control unit 11, from a designated storage location (location 25) wherein this data identifies to the control unit 11 the type of display station that the control unit 11 is connected to. To insure compatibility with the IBM 3270 system, the ID data stored in location 25 corresponds to data identifying the display station 13 as an IBM 3279 display station. This ID data is supplied by the microprocessor 15 to the control unit 11." Ex. 1015 at 7:11-27. *See also* Ex. 1002 at ¶¶106-108, 229-230.

IX. CONCLUSION

Substantial, new, and noncumulative technical teachings have been presented for claim 22. For these reasons, and the disclosures identified in the claim charts above, the references above teach and suggest the subject matter of the '970 Patent in

such a manner that the Petitioner is likely to prevail in showing that the alleged invention embodied in claim 22 of the '970 Patent was described by others prior to the effective filing date of the '970 Patent. Accordingly, the Petitioner respectfully requests that the Board grant this petition for *inter partes* review.

Dated: March 27, 2015

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on this 27th day of March, 2015, a copy of the attached PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 6,549,970, together with all exhibits, the power of attorney, and all other papers filed therewith was served by UPS on the attorneys of record for the patent owner, with a courtesy copy of the petition by electronic mail to the attorneys of record in the co-pending litigation, at the following addresses:

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