

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

**SAMSUNG ELECTRONICS CO., LTD., AND
SAMSUNG ELECTRONICS AMERICA, INC.**

Petitioners

v.

MAXELL, LTD.
Patent Owner

Inter Partes Review No.: IPR2025-01308

**PETITION FOR *INTER PARTES* REVIEW OF
U.S. PATENT NO. 11,277,650**

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1001	U.S. Patent No. 11,277,650.
1002	Declaration of Joseph Paradiso.
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1004	Certified English Translation of WO 2005/094080 (“Shindo”).
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1008	U.S. Patent No. 6,680,940 (“Lewin”).
1009	U.S. Patent Pub. No. 2004/0010687 (“Futa”).
1010	U.S. Patent No. 5,619,250 (“McClellan”).
1011	U.S. Patent Pub. No. 2004/0231003 (“Cooper”).
1012	“Wearable Sensing for Dynamic Management of Dense Ubiquitous Media,” Laibowitz, M., Gong, N-W., and Paradiso, J.A., in the Proc. of the Sixth International Workshop on Wearable and Implantable Body Sensor Networks (BSN 2009), Berkeley, CA, June 3-5, 2009.
1013	“Metaphor and Manifestation – Cross Reality with Ubiquitous Sensor/Actuator Networks,” Lifton, J., Laibowitz, M., Harry, D., Gong, N.W., Mittal, M. and Paradiso, J.A., IEEE Pervasive Computing Magazine, July-September 2009 (Vol. 8, No. 3).
1014	“Experiences and Challenges in Deploying Potentially Invasive Sensor Systems for Dynamic Media Applications,” Gong, N-W., Laibowitz, M., and Paradiso, J.A., in Proc. of the Cloud-Mobile Convergence for Virtual Reality Workshop (CMCVR 2010), Waltham MA, March 20, 2010.
1015	“Dynamic Privacy Management in Pervasive Sensor Networks,” Gong, N-W., Laibowitz, M., and Paradiso, J.A., in Proc. of Ambient Intelligence (AmI) 2010, Malaga, Spain, 25-29 October 2010.
1016	“Multimedia Content Creation using Societal-Scale Ubiquitous Camera Networks and Human-Centric Wearable Sensing,” Laibowitz, M., Gong, N-W., and Paradiso, J.A., in Proc. of ACM Multimedia 2010, Florence Italy, 25-29 October 2010.
1017	“Gestures Everywhere: A Multimodal Sensor Fusion and Analysis Framework for Pervasive Displays,” Nicholas Gillian, Sara

Exhibit No.	Description
	Pfenninger, Spencer Russell, and Joseph Paradiso, in Proceedings of the International Symposium on Pervasive Displays, Copenhagen, June 2014.
1018	Musical Zoo, Vimeo (Feb. 12, 2016), https://vimeo.com/155157756 .
1019	Channarukul, S., McRoy, S.W., and Ali, S.S., “MULTIFACE: multimodal content adaptations for heterogeneous devices,” in proc. of ICMI '04, October 13, 2004.
1020	Robertson, S., Whaton, C., Ashworth, C., and Franzke, M., “Dual Device User Interface Design: PDAs and Interactive Television,” in Proc. of the CHI '96 Conference, April 13-18, 1996.
1021	Lippman, A. and Kermode, R., “Media Banks: Entertainment and the Internet”, IBM Systems Journal, Vol. 35, No. 3&4, 1996.
1022	Spinner. Responsive Environments. https://resenv.media.mit.edu/#Projects#spinner .

CHART OF CLAIMS	
[1pre]	A contents reproducing system comprising:
[1a]	a main terminal; and
[1b]	a plurality of subsidiary terminals,
[1c]	wherein the main terminal comprises: a storage storing the contents;
[1d]	[wherein the main terminal comprises...] a first display displaying the contents; and
[1e]	[wherein the main terminal comprises...] a first controller controlling transmission/reception with the subsidiary terminals,
[1f]	wherein the first controller is configured to: store a plurality of device specific identification (ID) information of the subsidiary terminals,
[1g]	[wherein the first controller is configured to...] store a plurality of content information for identifying each of the contents, and
[1h]	[wherein the first controller is configured to...] store association information for transmitting one of the contents to one of the subsidiary terminals,
[1i]	wherein the association information defines that one of the contents identified by the content information is associated with one of the device specific ID information,
[1j]	wherein the plurality of subsidiary terminals comprise: a second display displaying the content; and
[1k]	[wherein the plurality of subsidiary terminals comprise...] a second controller controlling transmission/reception with the main terminal, the second controller storing device specific ID information for identifying the subsidiary terminal and transmitting the device specific ID information to the main terminal when connecting to the main terminal, and
[1l]	wherein, the main terminal determines whether it is possible to connect to the subsidiary terminal storing the device specific ID information, and transmits the content stored in the storage to the subsidiary terminal which can be

CHART OF CLAIMS
connected, based on the association information then the subsidiary terminal reproduces the received content on the second display.
[2] The contents reproducing system according to claim 1, wherein the main terminal includes a converter down-converting the content and transmits the down-converted content to the subsidiary terminal.
[3] The contents reproducing system according to claim 1, wherein the main terminal includes a network interface and acquires the content from an external server via the network interface.
[4pre] A contents reproducing system comprising:
[4a] a main terminal;
[4b] first subsidiary terminal; and
[4c] second subsidiary terminal,
[4d] wherein the main terminal comprises: a storage storing the contents;
[4e] [wherein the main terminal comprises...] a first display displaying the contents; and
[4f] [wherein the main terminal comprises...] a first controller controlling transmission/reception with the first subsidiary terminal and the second subsidiary terminal,
[4g] wherein the first controller is configured to: store first device specific identification (ID) information of the first subsidiary terminal and second device specific ID information of the second subsidiary terminal,
[4h] [wherein the first controller is configured to...] store first content information for identifying first content among the contents and second content information for identifying second content among the contents, and
[4i] [wherein the first controller is configured to...] store association information for transmitting one of the first content or the second content to one of the first subsidiary terminal or the second subsidiary terminal,

CHART OF CLAIMS

[4j] wherein the association information defines that one of the first content or the second content is associated with one of the first device specific ID information or the second device specific ID information,

[4k] wherein the first subsidiary terminal comprises: a second display displaying the content; and

[4l] [wherein the first subsidiary terminal comprises...] a second controller controlling transmission/reception with the main terminal, the second controller storing the first device specific ID information for identifying the first subsidiary terminal and transmitting the first device specific ID information to the main terminal when connecting to the main terminal,

[4m] wherein the second subsidiary terminal comprises: a third display displaying the content; and

[4n] [wherein the second subsidiary terminal comprises...] a third controller controlling transmission/reception with the main terminal, the third controller storing the second device specific ID information for identifying the second subsidiary terminal and transmitting the second device specific ID information to the main terminal when connecting to the main terminal, and wherein,

[4o] when the association information defines that the first content is associated with the first device specific ID information and the second content is associated with the second device specific ID information, the main terminal transmits the first content to the first subsidiary terminal and transmits the second content to the second subsidiary terminal, and

[4p] when the association information defines that the second content is associated with the first device specific ID information and the first content is associated with the second device specific ID information, the main terminal transmits the second content to the first subsidiary terminal and transmits the first content to the second subsidiary terminal.

I. INTRODUCTION

Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (“Petitioners”) request *inter partes* review of claims 1-4 (“Challenged Claims”) of U.S. Patent No. 11,277,650 (“’650 patent,”) (EX1001), owned by Maxell, Ltd. (“PO”).

Petitioners certify that the ’650 patent is available for *inter partes* review and that Petitioners are not barred or estopped from requesting an *inter partes* review challenging the patent claims on the grounds identified in this Petition.

II. STATEMENT OF PRECISE RELIEF REQUESTED

Petitioners request cancelation of the Challenged Claims in view of the following:

Ground	Claims	Stat. Basis	Prior Art
1	1-4	§103	Shindo
2	1-4	§103	Sasaki
3	1-4	§103	Futa in view of McClellan

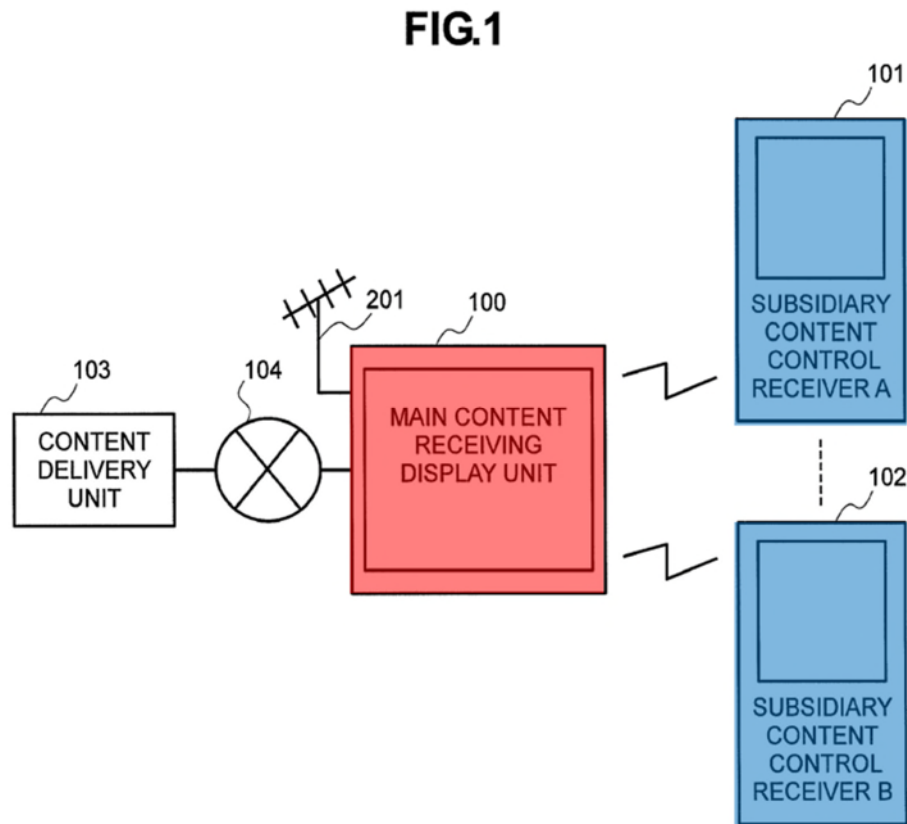
III. ’650 PATENT

A. Overview

The ’650 patent issued from Application No. 16/855,012, filed April 22, 2020, claims priority to U.S. Patent Application No. 11/861,390, filed September 26, 2007, and Japanese Patent Application No. 2006-261645, filed September 27,

2006. Accordingly, the '650 patent's priority date is no earlier than September 27, 2006. EX1002, ¶49.

The '650 patent relates to a “content receiving system” for displaying content to a plurality of viewers through the use of a main content receiving display unit 100 (red) and one or more subsidiary content control receivers 101-102 (blue):



EX1001, FIG. 1. The displayed content can include main content, displayed via display unit 100, and subsidiary content, displayed via subsidiary content control receiver. EX1001, 3:13-32, 3:64-4:3. EX1002, ¶50.

B. File History

During prosecution, the Examiner issued Office Actions rejecting the pending claims under 35 U.S.C. §103. EX1003, 115-125, 197-210. Applicant filed responses amending the claims. EX1003, 101-114, 181-196. The Examiner then issued a notice of allowance. EX1003, 17-25. EX1002, ¶51.

C. Person of Ordinary Skill in the Art

A person of ordinary skill in the art at the time of the alleged invention of the '650 patent ("POSITA") would have had a Bachelors' degree in electrical or computer engineering, computer science, or a comparable field of study, plus approximately two or more years of experience with content distribution for or over networked systems or other relevant experience. Additional education could substitute for experience, and industry experience could substitute for formal education. EX1002, ¶52.

D. Claim Construction Under 37 C.F.R. § 42.104(b)(3)

The Challenged Claims are interpreted using the same claim construction standard that is used in a civil action in federal court. 37 C.F.R. § 42.100(b). Claim terms not addressed below should be construed according to their plain and ordinary meaning to a POSITA at the time of the '650 patent's supposed invention.

**1. “first controller,” “second controller,” “third controller”
(claims 1, 4)**

There is a presumption that the limitations “first controller,” “second controller,” and “third controller” do not invoke means-plus function because the limitations do not recite “means.” Petitioners therefore apply plain and ordinary meaning constructions of “first controller,” “second controller,” and “third controller.” EX1002, ¶¶55-57.

IV. GROUND 1: CLAIMS 1-4 ARE OBVIOUS IN VIEW OF SHINDO

A. Shindo

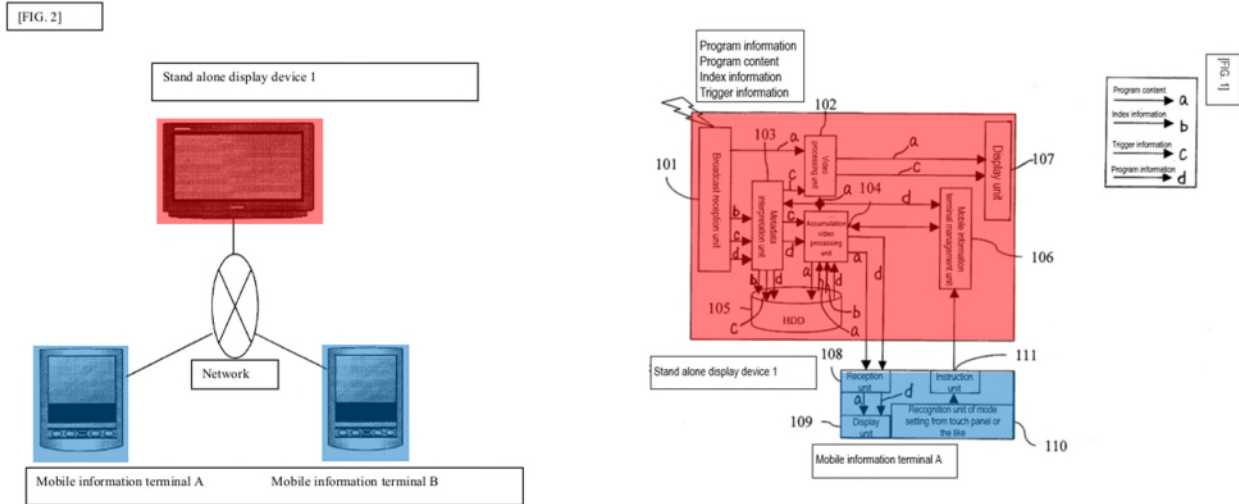
WO 2005/094080 (“Shindo”) was filed March 29, 2005 and published October 6, 2005. EX1004, cover page. Shindo is prior art under at least 35 U.S.C. §§102(a)-(b) (pre-AIA). EX1002, ¶¶58-59. Shindo is analogous art to the ’650 patent and was not considered during prosecution of the ’650 patent. EX1002, ¶¶60-61.

B. Claim 1

Shindo renders this claim obvious. EX1002, ¶62.

1. [1pre]

Shindo discloses *a contents reproducing system* (collectively, stand alone type display device 1 (red), one or more of mobile information terminal A and mobile information terminal B (blue)):

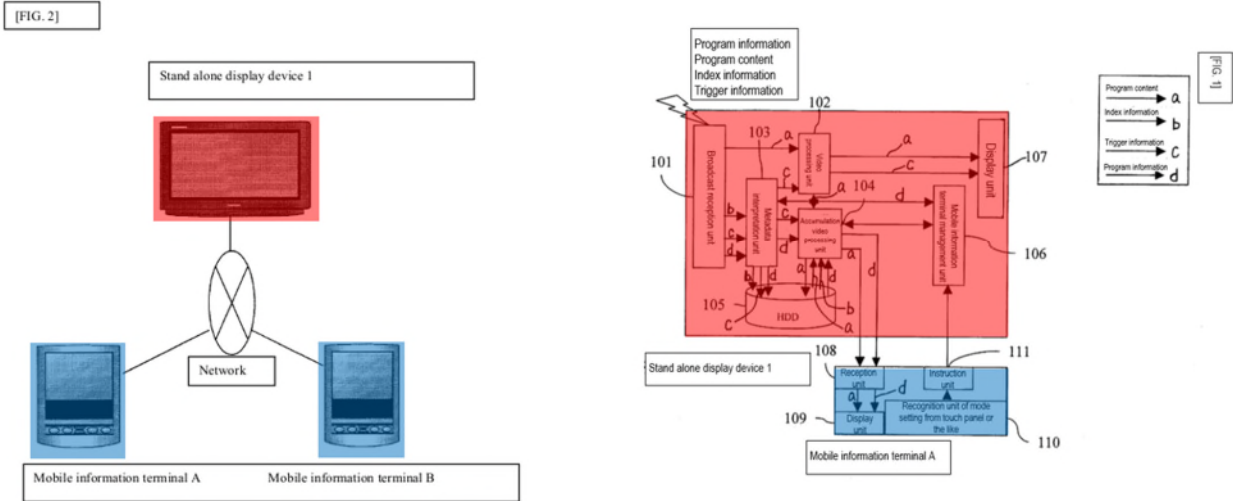


EX1004, FIGS. 1-2 (annotated¹), ¶1, ¶19 (“FIG. 1 is a block diagram showing the overall configuration of a linked display system...composed of an accumulation display device as a main display device, and mobile information terminals A and B as sub-display devices that receive program content from the accumulation display device”). EX1002, ¶63.

2. [1a]

Shindo discloses *a main terminal* (display device 1). EX1004, ¶19 (“overall configuration of this linked display system is composed of an accumulation display device as a main display device” (red)):

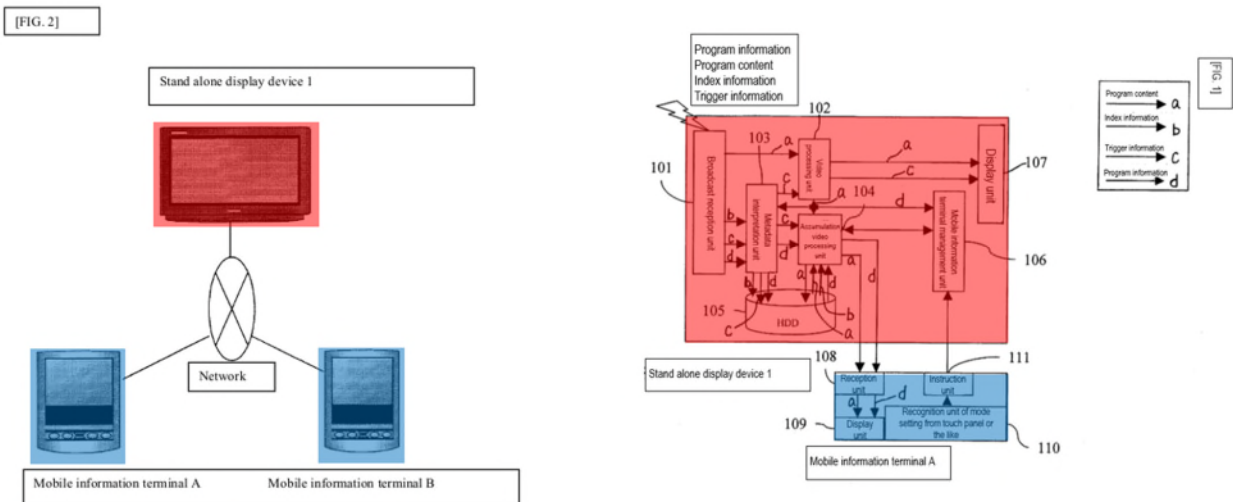
¹Drawings provided herein have been annotated for clarity.



FIGS. 1-2 (display device 1), ¶19. EX1002, ¶64.

3. [1b]

Shindo discloses *a plurality of subsidiary terminals* (mobile information terminals A-B (blue)):

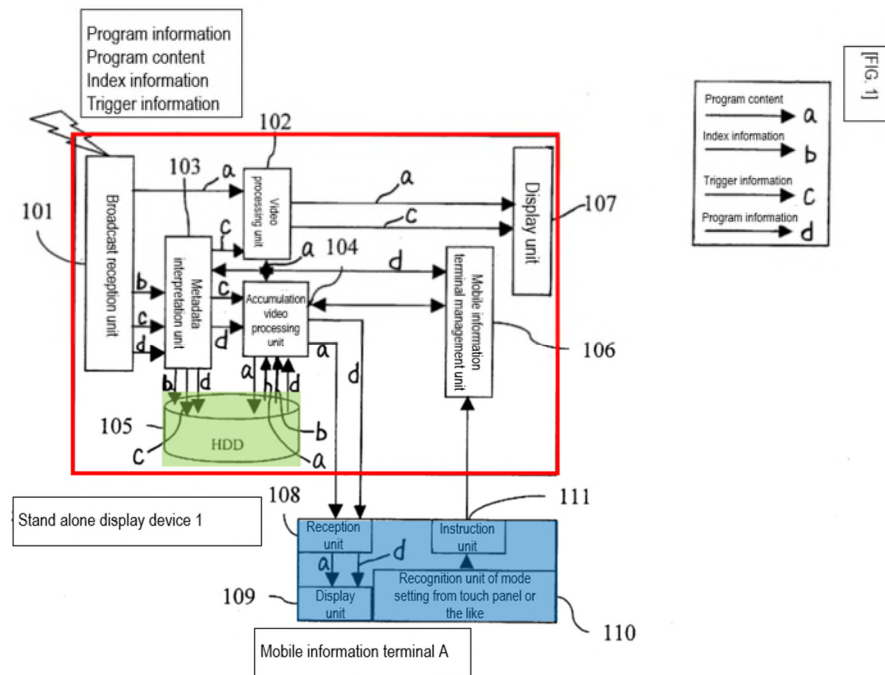


EX1004, FIGS. 1-2; ¶19 (“overall configuration of this linked display system is composed of...mobile information terminals A and B as sub-display devices that receive program content from the accumulation display device”). EX1002, ¶65.

4. [1c]

Shindo discloses *wherein the main terminal* (display device 1) *comprises a storage (HDD) storing the contents* (program content). EX1004, ¶20, ¶24, FIG. 1. EX1002, ¶66.

Display device 1 includes a hard disk drive (HDD) (green) “that is an accumulation means for accumulating the program content or index information.” EX1004, ¶20.



EX1004, FIG. 1. In operation, “video processing unit 102 outputs the program content received by the broadcast reception unit 101 to the display 107 for display,

and also outputs the program content being viewed to...be accumulated in HDD.”

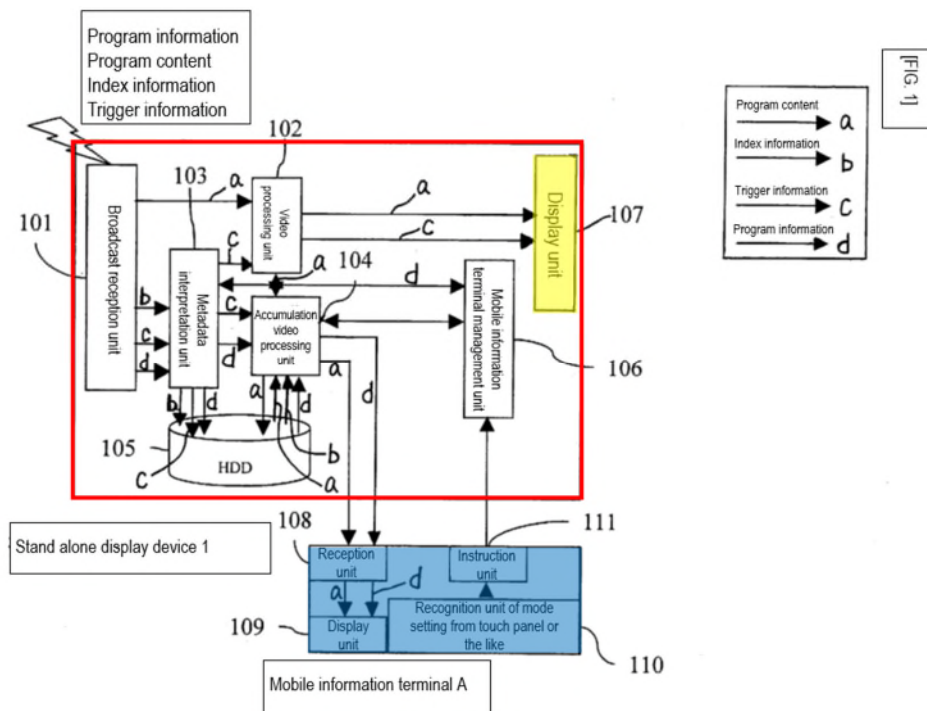
EX1004, ¶24, *see also* ¶24 (“all or any program contents may be accumulated in HDD 105, without being limited to the program contents being viewed”), ¶39, FIG. 1 (HDD 105). EX1002, ¶67.

5. [1d]

Shindo discloses *wherein the main terminal (display device 1) comprises...a first display (display unit 107) displaying the contents (program contents).*

EX1004, ¶20, ¶41, ¶44, FIG. 1. EX1002, ¶68.

Shindo’s display device 1 includes a display unit 107 (yellow):



EX1004, FIG. 1 (display unit 107). Display unit 107 “receives input of the program content from the video processing unit 102 and displays it.” EX1004, ¶20,

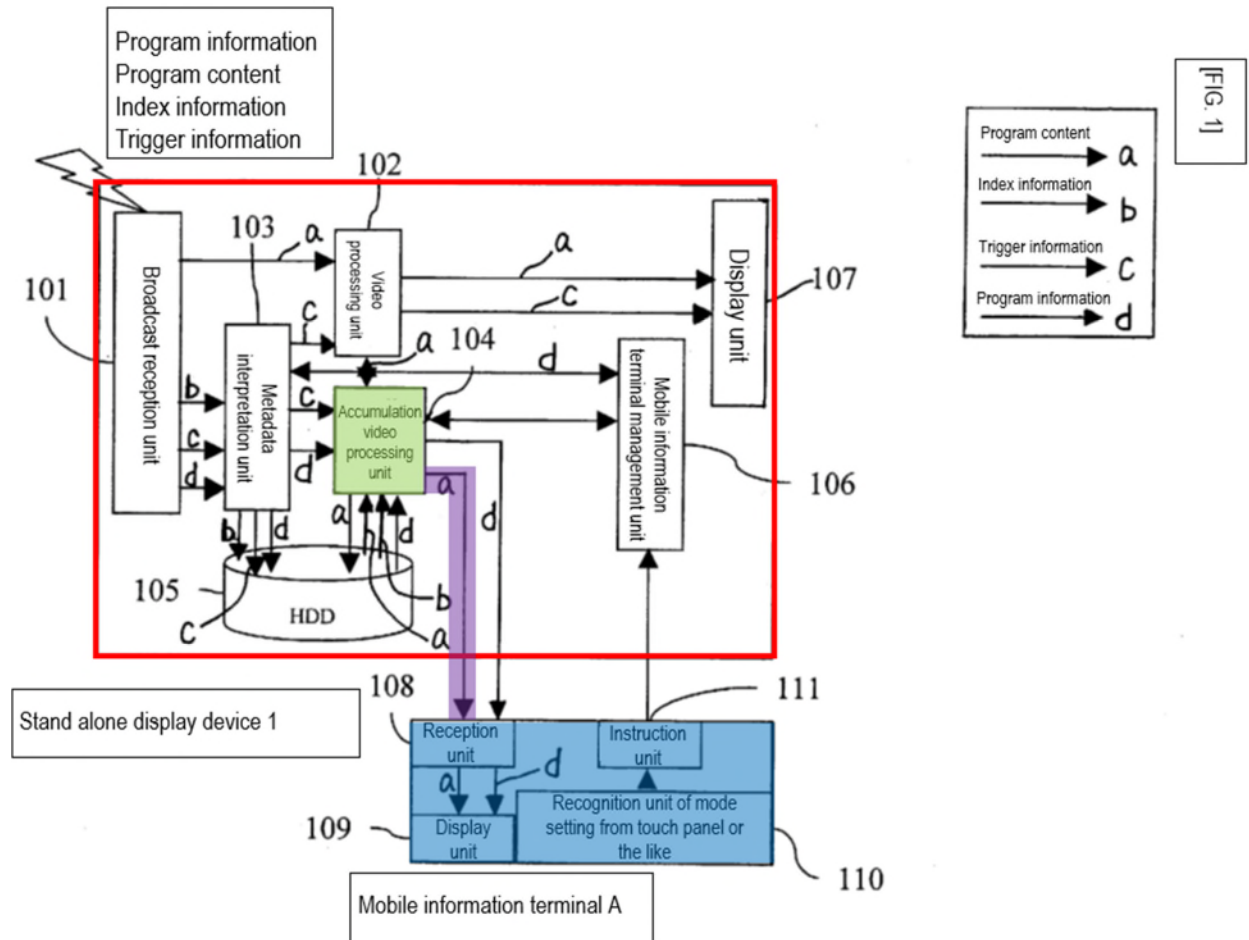
¶41 (“display unit 107...is assumed to be a display device at the center of a family where multiple people watch”), ¶44. EX1002, ¶69.

6. [1e]

Shindo discloses *wherein the main terminal comprises...a first controller* (collectively, video processing unit 103, video processing unit 104, mobile information terminal management unit 106) *controlling transmission/reception* (transmission of content/receipt of mode information) *with the subsidiary terminals* (mobile information terminals A-B). EX1004, ¶20, ¶¶33-34, ¶37, ¶40, ¶42, FIG. 1. EX1002, ¶70.

Shindo’s stand-alone display device 1 includes a video processing unit 104 and a mobile information terminal management unit 106. EX1004, ¶20. Video processing unit 104 controls transmission of content to the mobile information terminals A-B. EX1004, ¶33 (“program content and index information are sent directly from HDD 105 to accumulation processing unit 104”), ¶34 (“when the accumulation video processing unit 104 receives program content input from video processing unit 102, it accumulates the program content in HDD 105 for each program...and sends the reconstructed program content to the mobile information terminal”), ¶42 (“mobile information terminal A...receives the input of the reconstructed content from the accumulation video processing unit 104 of the stationary display device 1”). FIG. 1 includes signal lines that represent the

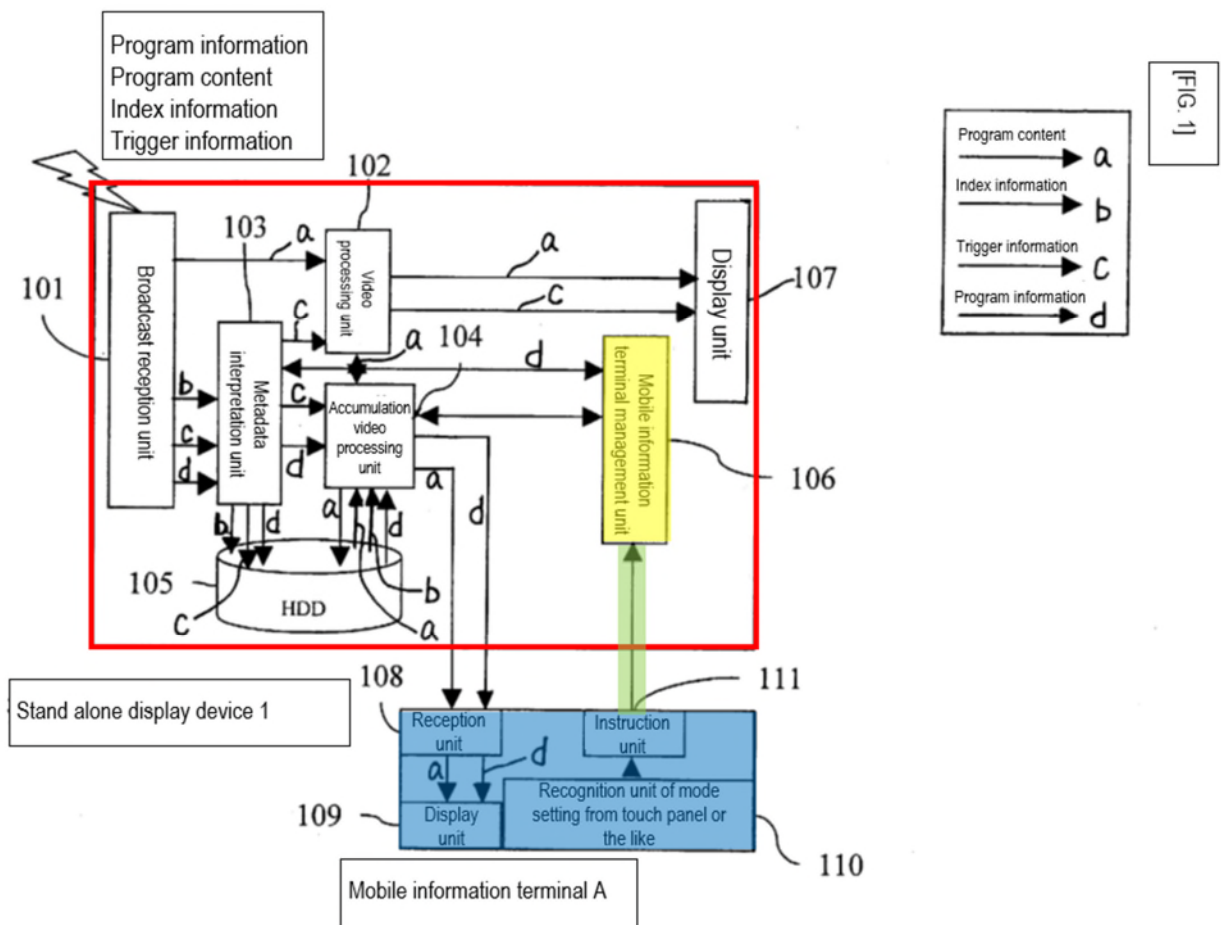
transmission of program content from display device 1 to mobile information terminal A:



EX1004, FIG. 1. As shown, video processing unit 104 (green) transmits content (purple signal line) to mobile information terminal A (blue). EX1002, ¶71.

Mobile information terminal management unit 106 controls reception of information from mobile information terminal A. EX1004, ¶20 (“mobile information terminal management unit 106 that manages information on the mobile information terminal to which the reconstructed program content should be

sent”), ¶37 (“mobile information terminal management unit 106 is requested to acquire the status of the mobile information terminal to which the rearranged program content is to be transmitted”), ¶40 (“mobile information terminal management unit 106 accepts a connection request from the mobile information terminal A, establishes a connection, and further accumulates and manages information (management information) of the mobile information terminal A”). Shindo’s FIG. 1 includes signal lines that represent the reception of information from mobile information terminal unit A:



EX1004, FIG. 1. Mobile information terminal management unit 106 (yellow) receives information (green signal line) from mobile information terminal A (blue). EX1002, ¶72.

7. [1f]

Shindo discloses *wherein the first controller* (collectively, metadata interpretation unit 103, video processing unit 104, mobile information terminal management unit 106) *is configured to store a plurality of device specific identification (ID) information* (terminal ID) *of the subsidiary terminals* (mobile information terminals A-B). EX1004, ¶40, FIG. 9. EX1002, ¶73.

Management unit 106 “accepts a connection request from the mobile information terminal A...and manages information (management information) of the mobile information terminal A.” EX1004, ¶40. Management information received by management unit 106 is illustrated in FIG. 9:

[FIG. 9]

19	
20	Terminal ID 1
21	Owner Taro Matsushita
22	Connection Status ON
23	User Taro Matsushita
24	Performance DisplaySize=2.5 Resolution=345 x 456 encode=mpeg4.wmv.asx
25	Mode Information Replay

EX1004, FIG. 9. Management information 19 “includes various information such as the terminal ID 20 of the mobile information terminal, the owner’s name 21, information indicating whether the connection status is ON or OFF 22, the user’s name 23, the performance (or function) 24 of the mobile information terminal, and mode information 25.” EX1004, ¶40. Terminal ID 20 is invoked when display device 1 sends content to mobile information terminals A-B in accordance with the mode information associated with the terminal ID. EX1004, ¶40 (“management unit 106 accepts a connection request from the mobile information terminal A, establishes a connection, and further accumulates and manages information (management information) of the mobile information terminal A” which includes “various information such as the terminal ID 20 of the mobile information terminal...and mode information 25”). In other words, Shindo’s terminal ID 20 is used by display device 1 for identifying the correct playback mode when sending content to the terminal associated with a given terminal ID. In this manner, the terminal ID 20 constitutes the claimed *device specific ID information*.

Furthermore, collectively, the terminal ID, the owner’s name, and the user’s name can also constitute the claimed *device specific ID information* as the collective nature of the information identifies the mobile information terminal. Moreover, this process is repeated for each of mobile information terminals A-B. EX1004,

¶40. Therefore, Shindo discloses *a plurality of device specific ID information*.

EX1002, ¶74.

Management unit 106 *is configured to store* (accumulate) the terminal IDs
20. EX1004, ¶40 (“mobile information terminal management unit 106 accepts a
connection request from the mobile information terminal A, establishes a
connection, and ***further accumulates and manages information (management
information)*** of the mobile information terminal A”). EX1002, ¶75.

8. [1g]

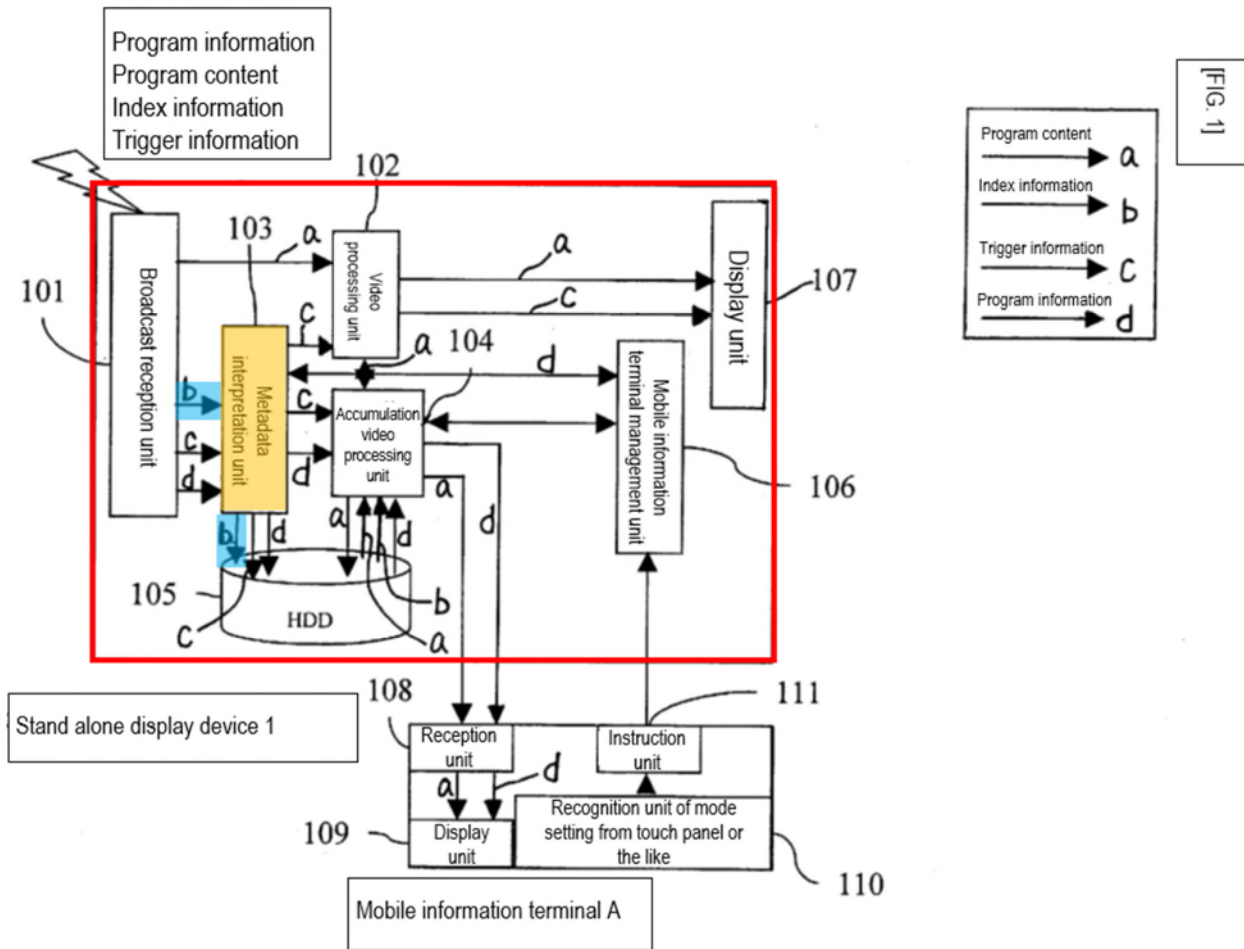
Shindo discloses *wherein the first controller* (collectively, metadata
interpretation unit 103, video processing unit 104, mobile information terminal
management unit 106) *is configured to...store a plurality of content information*
(content and index information) *for identifying each of the contents*. EX1004,
¶¶20-21, ¶¶26-27, FIGS. 1, 6. EX1002, ¶76.

Shindo’s system receives index information in addition to the program
content. EX1004, ¶20 (“display device 1...receives metadata such as program
content, index information...from broadcast waves or a network”). Index
information includes a content ID field (blue) that identifies the content the index
information corresponds to:

[FIG. 6]

```
<Content ID="200301011700FUJI">  
  <Index ID="001">  
    <starttime>200301011903</starttime>  
    <finishtime>200301011907</finishtime>  
  </Index>  
</Content>
```

EX1004, FIG. 6, ¶21 (“index information here refers to information that specifies a scene of a program, and by specifying the index information, a specific scene of the program can be specified”), ¶27 (“index information 10 has ‘200301011700FUJI’ described as ‘ContentID’ 11, which is a program ID, and ‘001’ described as an index ID 12”). Shindo’s metadata interpretation unit 103 stores the index information in HDD 105. EX1004, ¶26 (“metadata interpretation unit 103 receives input of metadata such as the index information...[and] accumulates the index information in association with the program content accumulated in HDD 105 based on its contents”). FIG. 1 illustrates the signal lines (blue) through which index information is transmitted:

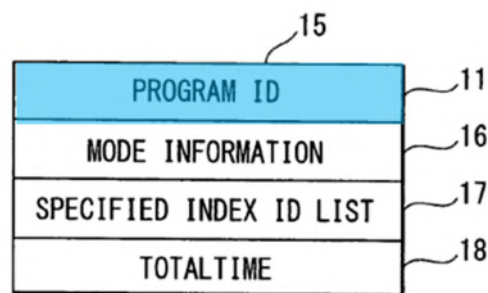


EX1004, FIG. 1. As shown, metadata interpretation unit 103 (orange) receives index information from broadcast reception unit 101 and stores the index information in HDD 105. EX1004, ¶20 (“In FIG. 1, among the alphabetic symbols, a, b, and c attached to some of the signal lines...b (2 places) indicates the signal line through which index information is transmitted”). Moreover, this process is repeated for each content for which there is index information. EX1002, ¶77.

9. [1h]

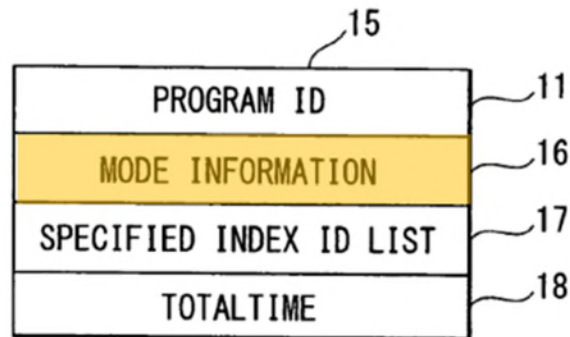
Shindo discloses *wherein the first controller* (collectively, metadata interpretation unit 103, video processing unit 104, mobile information terminal management unit 106) *is configured to...store association information* (collectively, trigger information, index information, and management information) *for transmitting one of the contents* (one or more scenes of program content) *to one of the subsidiary terminals* (mobile terminal A). EX1004, ¶20, ¶28, ¶¶33-38, ¶57, FIGS. 4, 7, 9. EX1002, ¶78.

Shindo's system receives trigger information in addition to the program content and the index information. EX1004, ¶20 ("display device 1...receives metadata such as program content, index information, or trigger information from broadcast waves or a network"). Trigger information includes a program field (blue) that identifies the content to which the index information corresponds:



EX1004, FIG. 7; ¶29 ("trigger information 15 includes the program ID 11 for identifying a program (or content) corresponding to the trigger information 15").

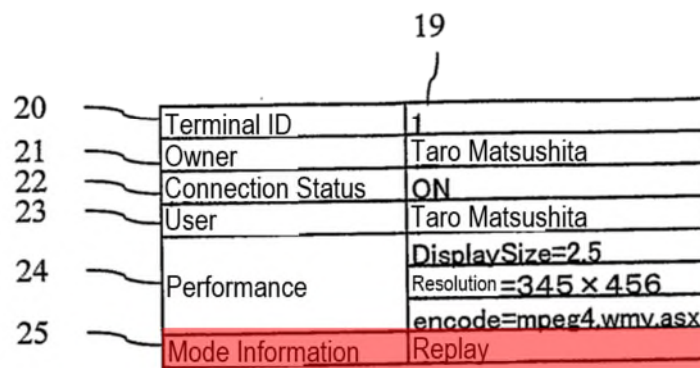
The trigger information further includes mode information (orange) that indicates the possible playback modes for that particular program ID 11:



EX1004, FIG. 7; ¶57 (“different mode information exists for each program” and “operation modes include linked playback, replay playback, highlight playback...and other modes, but these can be freely set according to the program to be viewed and are not limited in any way”), FIG. 15. EX1002, ¶79.

As discussed above, Shindo’s management unit 106 manages management information associated with a mobile information terminal, which includes mode information (red) that indicates the viewer’s requested playback mode:

[FIG. 9]



EX1004, FIG. 9. In the example shown in FIG. 9, the requested playback mode is “replay.” In operation, when the trigger information for content is detected, Shindo’s system determines whether there is a mobile information terminal that requested a playback mode supported by or associated with the content by referring to management information 19. EX1004, ¶28 (“metadata interpretation unit 103 first inquires of the mobile information terminal management unit 106 whether there is a mobile information terminal with the same mode information as the trigger information”), ¶33 (“if the received information includes trigger information 15, the trigger information is extracted...the mode information in the trigger information 15 is detected, and the mobile information terminal management unit 106 is inquired as to whether a mobile information terminal with the corresponding mode set exists”). EX1002, ¶80.

Once Shindo’s system determines there is a mobile information terminal that has indicated a playback mode supported by the content, Shindo’s system delivers the additional content to the mobile information terminal in accordance with the indicated mode information and index information. EX1004, ¶33 (“If the corresponding mobile information terminal exists, index information 10 is detected based on specified index ID 17 in trigger information...[and] program content is extracted from HDD 105..[and] sent directly from HDD 105 to accumulation video processing unit 104”), ¶34 (“When the accumulation video processing unit 104

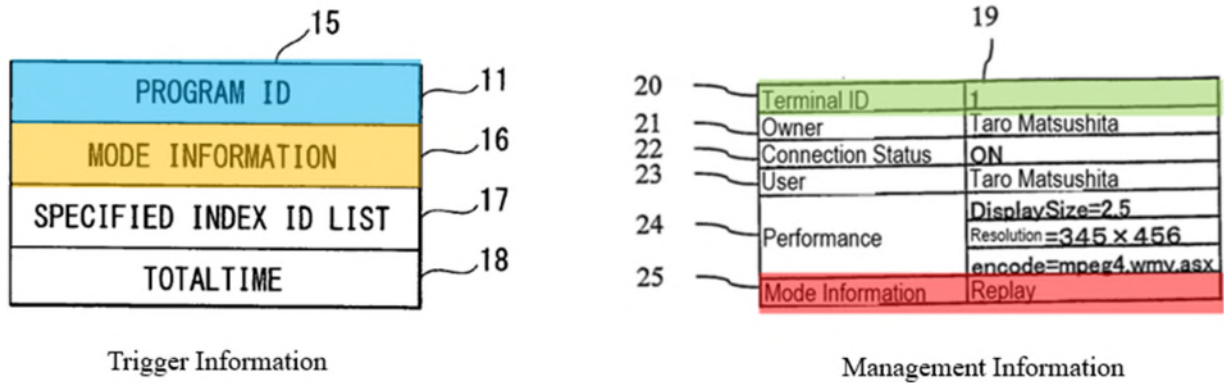
receives program content input from video processing unit 102, it accumulates the program content in HDD 105 for each program” and “when trigger information 15, index information 10, and partial program content linked to the index information 10 are input from the metadata interpretation unit, the accumulation video processing unit 104 rearranges the partial content based on the contents of trigger information 15...and sends the reconstructed program content to the mobile information terminal”), ¶¶35-38, FIG. 4. In this manner, the trigger information, index information, and the management information work in conjunction to associate a device (e.g., terminal A or terminal B) with content (e.g., one or more scenes of content for the “replay” playback mode). EX1002, ¶81.

10. [1i]

Shindo discloses *wherein the association information* (management information, index information, and trigger information) *defines that one of the contents* (one or more scenes of content) *identified by the content information* (content ID) *is associated with one of the device specific ID information* (terminal ID). EX1004, FIGS. 7, 9. EX1002, ¶82.

Shindo’s association information defines that one of the contents (e.g., one or more scenes of a baseball game) identified by the content information is associated with one of the mobile information terminals by comparing the trigger information, with the management information and the index information. *See*

§IV(B)(9) (limitation 1h). For example, trigger information (left) and management information (right) are provided:



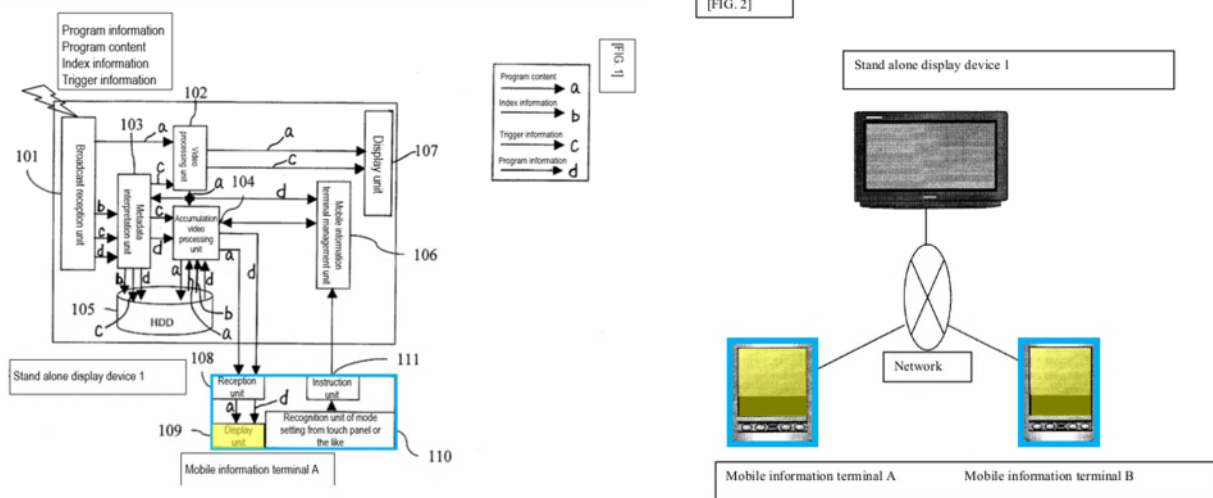
EX1004, FIGS. 7, 9. Trigger information includes the content identifier (e.g., program ID 11) that identifies the content (e.g., baseball game). Trigger information also includes mode information 16 that indicates the modes supported by the content identified by the program ID 11. Management information 19 includes mode information 25 that indicates the modes requested by the terminal associated with terminal ID 1. Through this association, trigger information 15 and management information 19 collectively associate contents identified by the content information with one of the device specific ID information. EX1002, ¶83.

11. [1j]

Shindo discloses *wherein the plurality of subsidiary terminals (mobile information terminals A-B) comprise...a second display (display unit 109) displaying the content.* EX1004, FIGS. 1-2, ¶42, ¶49, ¶53. EX1002, ¶84.

Mobile information terminals (blue), such as mobile information terminals

A-B, include a display unit (yellow):

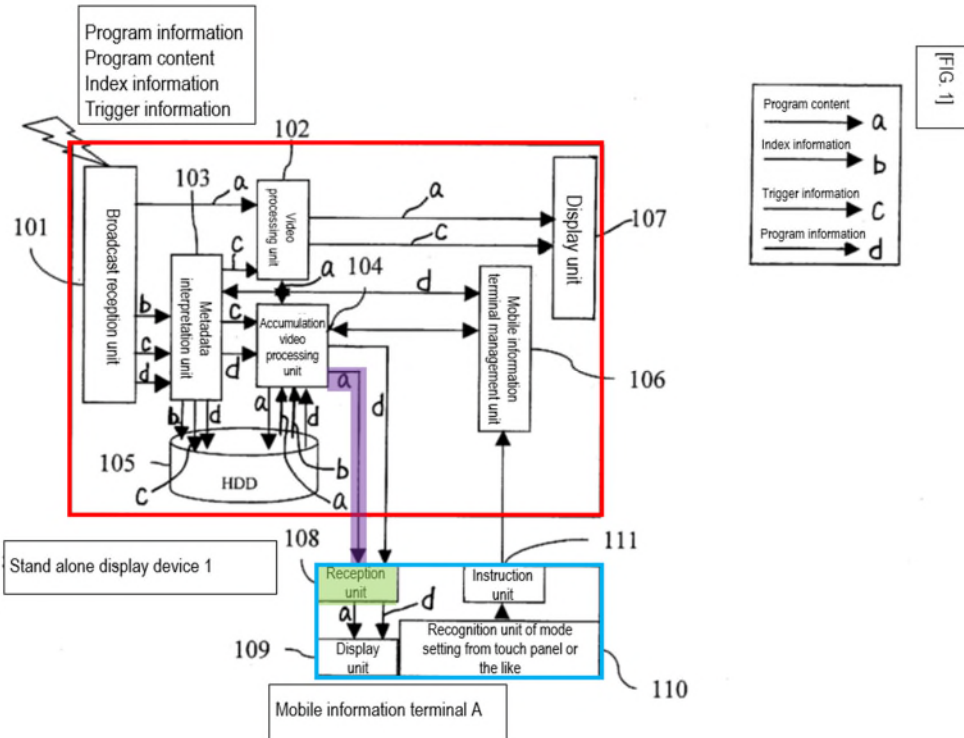


EX1004, FIG. 1 (display unit 109), FIG. 2 (illustrating a display), ¶42 (“mobile information terminal A is composed of a reception unit that receives the input of the reconstructed program content from the accumulation video processing unit 104 of the stationary display device 1 and sends it to the display unit 109, the display unit 109...receives the reconstructed program content from the reception unit 108 and displays it”), ¶49 (“Mobile information terminal A receives the sent stream at the reception unit 10-8 and displays it on the display unit 109”), ¶53 (“display unit 109...may display the arrival of trigger information and its content on the screen”). EX1002, ¶85.

12. [1k]

Shindo discloses this limitation. EX1004, ¶20, ¶40, ¶42, FIGS. 1, 9.
EX1002, ¶86.

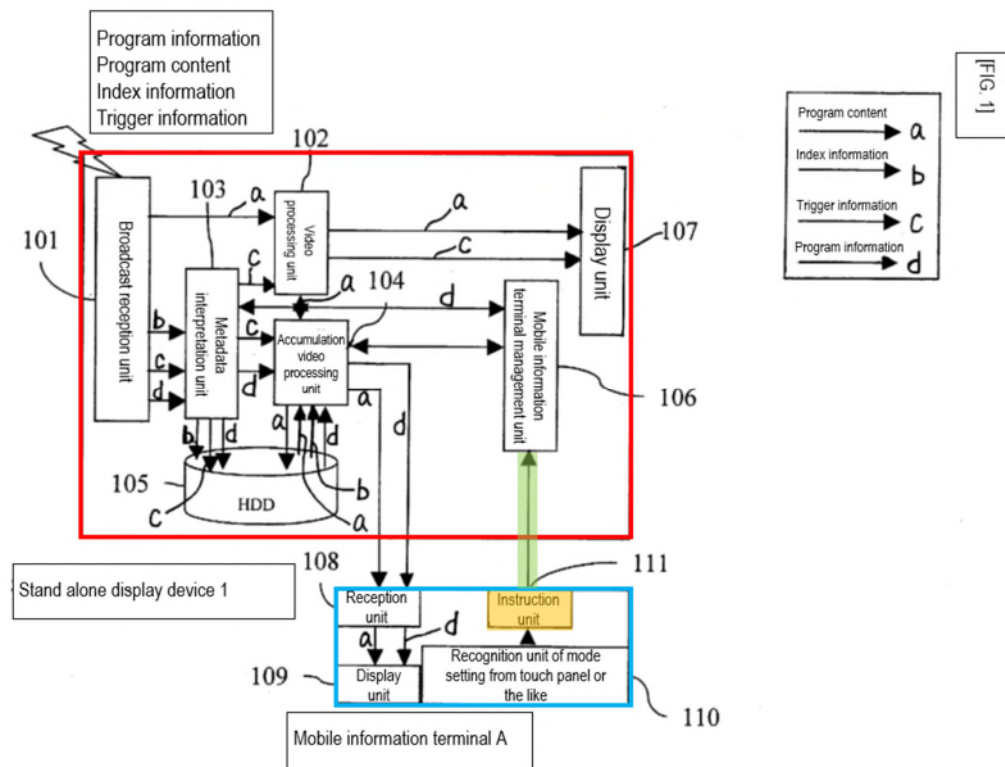
Shindo discloses *wherein the plurality of subsidiary terminals* (mobile information terminals A, B) *comprise...a second controller* (collectively, reception unit 108, instruction unit 111) *controlling transmission/reception with the main terminal* (display device 1). EX1004, ¶20, ¶42, ¶45, FIG. 1. Mobile information terminal A includes a reception unit 108 and an instruction unit 111. EX1004, ¶42, FIG. 1. Reception unit 108 controls the reception of information from display device 1. EX1004, ¶42 (“reception unit 108...receives the input of the reconstructed program content”). FIG. 1 (annotated below) includes signal lines that represent the reception of program content by mobile information terminal unit A from display device 1:



EX1004, FIG. 1. Reception unit 108 (green) of mobile information terminal A (blue) receives content from display device 1 (red) as illustrated via signal line a (purple). EX1004, ¶20 (“In FIG. 1, among the alphabetic symbols...a (7 places) indicates the signal line through which program content is transmitted”). EX1002, ¶87.

Instruction unit 111 controls the transmission of information (e.g., terminal information, mode information) from the mobile information terminal to the display device. EX1004, ¶42 (“instruction unit 111...sends input information, connection information, and terminal information (FIG. 9) from the recognition unit 110 to the mobile information terminal management unit 106”), ¶45 (“a connection request from the instruction unit 111 of mobile information terminal A

is sent to the mobile information terminal management unit 106 of the stand alone type display device 1, a connection is established, and terminal information is sent”), ¶45 (“mode information is sent...from the instruction unit 111, which is accumulated in the mobile information terminal management unit 106”). FIG. 1 (annotated below) includes signal lines that represent the transmission of information from mobile information terminal unit A to display device 1:



EX1004, FIG. 1. Instruction unit 111 (orange) of mobile information terminal A (blue) transmits information to display device 1 (red) as illustrated via signal line (green). EX1004, ¶42, ¶45. EX1002, ¶88.

Shindo discloses *the second controller* (reception unit 108, instruction unit 111) *storing device specific ID information* (terminal ID) *for identifying the*

subsidiary terminal (mobile information terminal A or B). EX1004, ¶40, ¶42, ¶45, FIG. 9. Instruction unit 111 sends terminal information to display device 1 when a connection request is made. EX1004, ¶40 (“mobile information terminal management unit 106 accepts a connection request from the mobile information terminal A, establishes a connection, and further accumulates and manages information (management information) of the mobile information terminal A”), ¶45 (“a connection request from the instruction unit 111...is sent to the mobile information terminal management unit 106...a connection is established, and terminal information is sent”). Terminal information is shown in FIG. 9 and includes, among other items, the terminal ID that identifies a specific terminal:

[FIG. 9]

19	
20	Terminal ID 1
21	Owner Taro Matsushita
22	Connection Status ON
23	User Taro Matsushita
24	Performance DisplaySize=2.5 Resolution=345×456
25	Mode Information encode=mpeg4.wmv.asx Replay

EX1004, FIG. 9, ¶40 (“terminal ID 20 of the mobile information terminal”).

Shindo’s recognition unit stores the terminal information 19 so that it can send terminal information 19 to management unit 106. EX1004, ¶42 (“instruction unit

111...sends...terminal information (FIG. 9) from the recognition unit 110 to the mobile information terminal management unit 106”). EX1002, ¶89.

Shindo discloses *second controller* (reception unit 108, instruction unit 111)...*transmitting the device specific ID* (terminal ID) *information to the main terminal* (display device 1) *when connecting to the main terminal* (display device 1). EX1004, ¶40, ¶45. Instruction unit 111 sends terminal information, which includes the terminal ID, to display device 1 when a connection request is made. EX1004, ¶40 (“mobile information terminal management unit 106 accepts a connection request from the mobile information terminal A, establishes a connection, and further accumulates and manages information (management information) of the mobile information terminal A”), ¶45 (“connection request from...instruction unit 111...is sent to the mobile information terminal management unit 106...a connection is established, and terminal information is sent”), FIG. 9 (“terminal ID”). EX1002, ¶90.

13. [11]

Shindo discloses this limitation. EX1004, ¶22, ¶26, ¶28, ¶¶33-34, ¶38, ¶42. EX1002, ¶91.

Shindo discloses *wherein, the main terminal* (display device 1) *determines whether it is possible to connect to the subsidiary terminal* (mobile information terminal A) *storing the device specific ID information* (terminal ID). EX1004, ¶22,

¶26, ¶28, ¶33. Display device 1 receives trigger information that “specify the timing of transfer or distribution of a program to a mobile information terminal.” EX1004, ¶22. In operation, Shindo’s display device receives, as input, metadata, such as the trigger information, from broadcast reception unit 101. EX1004, ¶26. Display device 1 then determines whether it is possible to connect to a mobile terminal by referencing the management information associated with the mobile terminal to determine the connection status of the mobile terminal. EX1004, ¶37 (“management unit 105 is requested to acquire the status of the mobile information terminal to which the rearranged program content is to be transmitted”), ¶40 (“management information 19 of the mobile information terminal includes...information indicating whether the connection status is ON or OFF 22”), FIG. 9. Furthermore, as previously discussed, the mobile information terminal stores its terminal ID. See §IV(B)(12) (limitation 1k). EX1002, ¶92.

Separately, when the input is trigger information, Shindo’s display device also determines whether it is possible to connect to a mobile terminal for the purpose of satisfying the trigger information by matching the mode information in the trigger information to stored mode information in the management information associated with the mobile information terminal. EX1004, ¶28 (“if the input is trigger information, the metadata interpretation unit 103 first inquires of the mobile information terminal management unit 106 whether there is a mobile information

terminal with the same information as the trigger information”), ¶33 (“mode information in the trigger information 15 is detected, and the mobile information terminal management unit 106 is inquired as to whether a mobile information terminal with the corresponding mode set exists”). EX1002, ¶93.

Shindo discloses *the main terminal* (display device 1)...*transmits the content* (one or more scenes of a program) *stored in the storage* (HDD) *to the subsidiary terminal* (mobile device terminal A) *which can be connected, based on the association information* (trigger information, management information) EX1004, ¶28, ¶¶33-34, ¶38, ¶42. Display device 1 transmits the content that has been accumulated to the mobile information terminal in accordance with the mode information included in both the trigger information and the management information and the one or more segments or scenes of content specified in the index information. EX1004, ¶28 (“If there is a mobile information terminal, the metadata interpretation unit 103 searches the HDD 105 for index information 10 of the corresponding index ID 12, extracts the partial program content associated with the corresponding index information 10, and sends it to the accumulation video processing unit 104 together with the mobile information terminal information”), ¶33 (“mode information in the trigger information is detected, and the mobile information terminal management unit 106 is inquired as to whether a mobile information terminal with the corresponding mod set exists...[i]f the corresponding

mobile information terminal exists based on the detected index information 10, program content is extracted from HDD 105...the program content...[is] sent directly from HDD 105 to accumulation video processing unit 104”), ¶34 (“accumulation video processing unit 104 rearranges the partial content based on the contents of trigger information 15...and sends the reconstructed program content to the mobile information terminal”), ¶42 (“mobile information terminal A is composed of a reception unit 108 that receives the input of the reconstructed program content from the accumulation video processing unit 104 of the stationary display device 1”). Program content is extracted from HDD 105. EX1004, ¶34 (“When the accumulation video processing unit 104 receives program content input from video processing unit 102, it accumulates the program content in HDD 105 for each program”), ¶38. EX1002, ¶94.

Shindo discloses *and then the subsidiary terminal* (mobile information terminal) *reproduces the received content* (one or more scenes of program content) *on the second display* (display). EX1004, 42. Shindo’s mobile information terminal “receives the input of the reconstructed program content from the accumulation video processing unit 104 of the stationary display device 1 and sends it to the display unit 109...that receives the reconstructed program content from the reception unit 108 and displays it.” EX1004, ¶42. EX1002, ¶95.

C. Claim 2

Shindo renders this claim obvious. EX1002, ¶¶96-97; §IV(B) (claim 1).

Shindo discloses *wherein the main terminal* (display device 1) *includes a converter* (conversion function of accumulation video processing unit 104) *down-converting the content* (program content) *and transmits the down converted content to the subsidiary terminal* (mobile information terminal A). Shindo discloses, for each of the mobile information terminals, receiving management information, which includes “various information such as...the performance (or function 24) of the mobile information terminal” as shown in FIG. 9:

[FIG. 9]

20	Terminal ID	1
21	Owner	Taro Matsushita
22	Connection Status	ON
23	User	Taro Matsushita
24	Performance	DisplaySize=2.5 Resolution=345 x 456 encode=mpeg4.wmv.aspx
25	Mode Information	Replay

EX1004, ¶40, FIG. 9. FIG. 9 includes performance information 24 (green) that indicates the mobile terminal’s display size, resolution, and encoding information. Shindo’s accumulation video processing unit 104 “inquires...about the information of the information terminal A, and processes the stream according to the mobile information terminal.” EX1004, ¶49 (“in the case of the mobile terminal

management information shown in FIG. 9, the stream is processed according to display size=2.5, resolution=345x456, and encode=mpeg4”). In other words, Shindo discloses converting the program content into a format compatible with the performance specifications of the mobile terminal before sending the program content to the mobile terminal EX1004, ¶37 (“the program content is reconstructed to suit the mobile information terminal (S407). Specifically, it is assumed that the format is converted and the file size is changed, that is, the bit rate is changed”). A POSITA would have understood and found obvious that this converting can include a down converting of the content, such as when the mobile terminal has a smaller or lower-resolution display than the main terminal. EX1002, ¶¶96-98. Following the conversion, “accumulation video processing unit 104 sends the stream to the mobile information terminal A according to the terminal information.” EX1004, ¶49. EX1002, ¶¶96-98.

D. Claim 3

Shindo renders this claim obvious. EX1002, ¶¶99-100; §IV(B) (claim 1). Shindo discloses *wherein the main terminal* (display device 1) *includes a network interface* (broadcast reception unit 101) *and acquires the content* (program content) *from an external server via the network interface*. Display device 1 includes “a broadcast reception unit 101 that receives...program content...from broadcast waves or a network.” EX1004, ¶20, ¶8. The network refers to “networks

such as ADSL and FTTH, but are not limited to those.” EX1004, ¶23. A POSITA would have understood and found obvious that ADSL corresponds to “asymmetric digital subscribe line” and FTTH corresponds to “fiber to the home.” EX1008, 3:4-5, 34-36. As is generally known in the art, ADSL is a “network delivery system...[that] has the downstream capacity to handle the most complex data transfers, such as full motion video.” EX1008, 3:4-5. EX1002, ¶101.

Because Shindo discloses that display device 1 can receive program content over a network via broadcast reception unit 101, a POSITA would have understood and found obvious that display device 1 or broadcast reception unit 101 would include a network interface to communicate with an external system over a network. Furthermore, a POSITA would have understood and found obvious that display device 1 or broadcast reception unit 101 would communicate with an external server using the network interface, such as when receiving program content in the form of full motion video using ADSL. EX1002, ¶102.

E. Claim 4

Shindo renders this claim obvious. EX1002, ¶103.

1. [4pre]

Shindo discloses this limitation. §IV(B)(1) (limitation 1pre). EX1002, ¶104.

2. [4a]

Shindo discloses this limitation. §IV(B)(2) (limitation 1a). EX1002, ¶105.

3. [4b]

This limitation has been recast from “a plurality of subsidiary terminals” to “first subsidiary terminal.” Nevertheless, Shindo discloses this limitation.

§IV(B)(3) (limitation 1b). EX1002, ¶106.

4. [4c]

This limitation has been recast from “a plurality of subsidiary terminals” to “second subsidiary terminal.” Nevertheless, Shindo discloses this limitation.

§IV(B)(3) (limitation 1b). EX1002, ¶107.

5. [4d]

Shindo discloses this limitation. §IV(B)(4) (limitation 1c). EX1002, ¶108.

6. [4e]

Shindo discloses this limitation. §IV(B)(5) (limitation 1d). EX1002, ¶109.

7. [4f]

This limitation has been recast from reciting “with the subsidiary terminals” to “with the first subsidiary terminal and the second subsidiary terminal.”

Nevertheless, Shindo discloses this limitation. §IV(B)(6) (limitation 1e). EX1002, ¶110.

8. [4g]

This limitation has been recast from reciting “a plurality of device specific identification (ID) information of the subsidiary terminals” to “with the first subsidiary terminal and the second subsidiary terminal.” Nevertheless, Shindo discloses this limitation. §IV(B)(7) (limitation 1f). EX1002, ¶111.

9. [4h]

This limitation has been recast from reciting “a plurality of content information” to “first content information for identifying first content among the contents and second content information for identifying second content among the contents.” Nevertheless, Shindo discloses this limitation. §IV(B)(8) (limitation 1g). EX1002, ¶112.

10. [4i]

This limitation has been recast from reciting “store association information for transmitting one of the contents to one of the subsidiary terminals” to “store association information for transmitting one of the first content or the second content to one of the first subsidiary terminal or the second subsidiary terminal.” Nevertheless, Shindo discloses this limitation as “one of the first content or the second content” is the same as “one of the contents” and “one of the first subsidiary terminal or the second subsidiary terminal” is the same as “one of the subsidiary terminals.” §IV(B)(9) (limitation 1h). EX1002, ¶113.

11. [4j]

This limitation has been recast from reciting “the association information defines that one of the contents identified by the content information is associated with one of the device specific ID information” to “the association information defines that one of the first content or the second content is associated with one of the first device specific ID information or the second device specific ID

information.” Nevertheless, Shindo discloses this limitation as “one of the first content or the second content” is the same as “one of the contents” and “one of the first device specific ID information or the second device specific ID information” is the same as “one of the subsidiary terminals.” §IV(B)(10) (limitation 1i). EX1002, ¶114.

12. [4k]

Shindo discloses this limitation. §IV(B)(11) (limitation 1j). EX1002, ¶115.

13. [4l]

Shindo discloses this limitation. §IV(B)(12) (limitation 1k). EX1002, ¶116.

14. [4m]

Shindo discloses this limitation. §IV(B)(11) (limitation 1j). EX1002, ¶117.

15. [4n]

Shindo discloses this limitation. §IV(B)(12) (limitation 1k). EX1002, ¶118.

16. [4o]

Shindo discloses this limitation. §IV(B)(13) (limitation 1l); EX1004, ¶43 (showing multiple terminals watching the same broadcast), ¶¶50-52 (showing terminal B joining in the middle of the program, requesting highlight mode first, followed by a request for replay mode). EX1002, ¶119.

17. [4p]

Shindo discloses this limitation. §IV(B)(13) (limitation 1l); EX1004, ¶43 (showing multiple terminals watching the same broadcast), ¶¶50-52 (showing

terminal B joining in the middle of the program, requesting highlight mode first, followed by a request for replay mode). EX1002, ¶120.

V. GROUND 2: CLAIMS 1-4 ARE OBVIOUS IN VIEW OF SASAKI

A. Sasaki

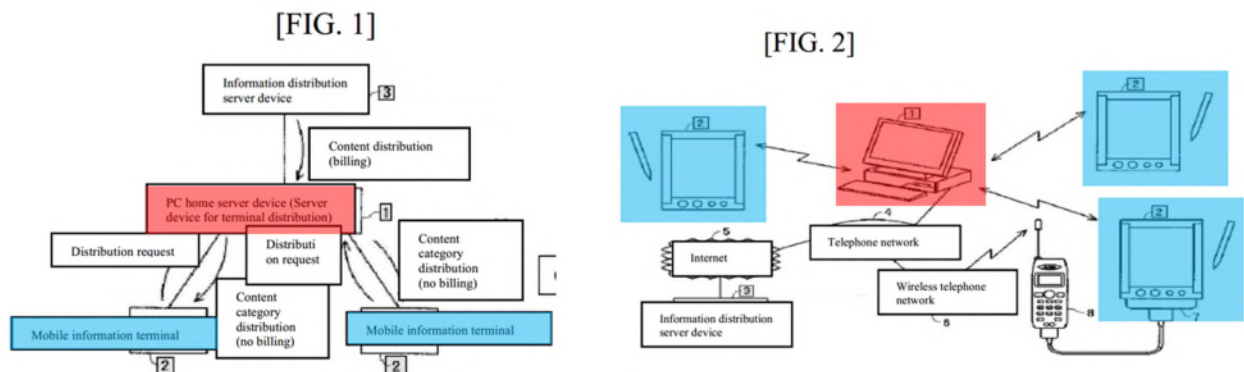
Japanese Patent Appl. Pub. No. 2003-208375 (“Sasaki”) was filed January 10, 2002, and published July 25, 2003. EX1006, cover page. Sasaki is prior art under 35 U.S.C. §§102(a) and (b) (pre-AIA). EX1002, ¶¶121-122. Sasaki is analogous art to the ’650 patent and was not considered during prosecution of the ’650 patent. EX1002, ¶¶123-124.

B. Claim 1

Sasaki renders this claim obvious. EX1002, ¶125.

1. [1pre]

Sasaki discloses *a contents reproducing system* (collectively, PC home server device 1 (red), one or more personal digital assistants (PDAs) 2 (blue)):

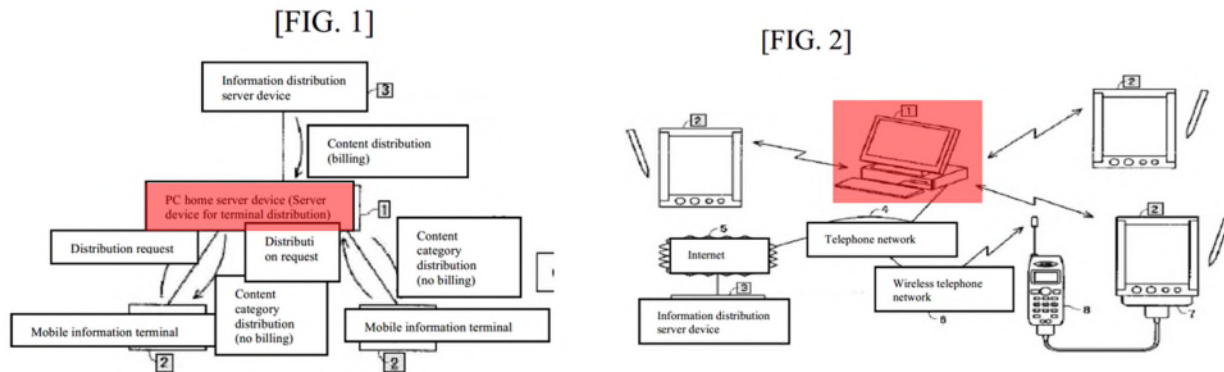


EX1006, FIGS. 1-2, ¶40 (“FIG. 2... showing ... embodiment of the information distribution system” which includes “PC home server 1, which is made up of a

personal computer 1” and “PDA 2, which may be equipped by each family member”). EX1002, ¶126.

2. [1a]

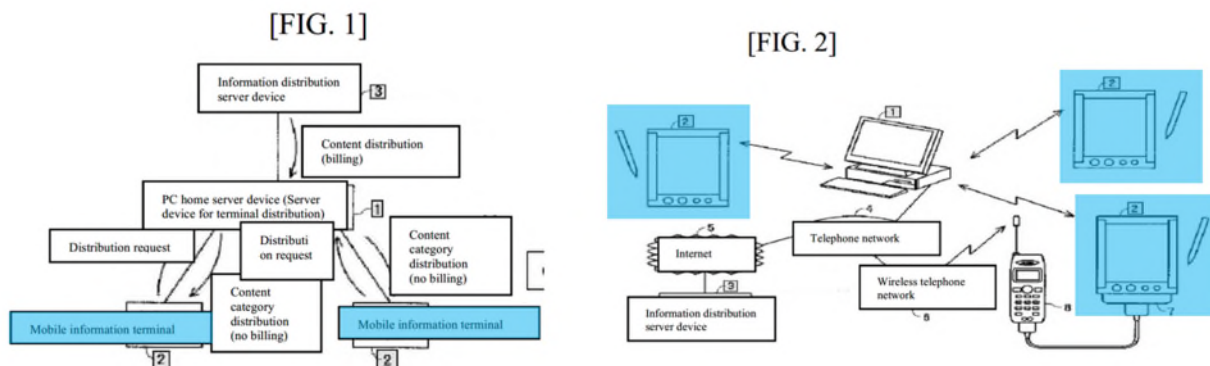
Sasaki discloses *a main terminal* (PC home server device 1 (red)). EX1006, ¶40 (“PC home server 1, which is made up of a personal computer 1”):



EX1006, FIGS. 1-2 (PC home server device 1/main terminal 1). EX1002, ¶127.

3. [1b]

Sasaki discloses *a plurality of subsidiary terminals* (multiple PDAs 2, blue). EX1006, ¶40 (“PDA 2, which may be equipped by each family member”):



EX1006, FIGS. 1-2 (PDA 2/mobile information terminal 2/subsidiary terminals 2).

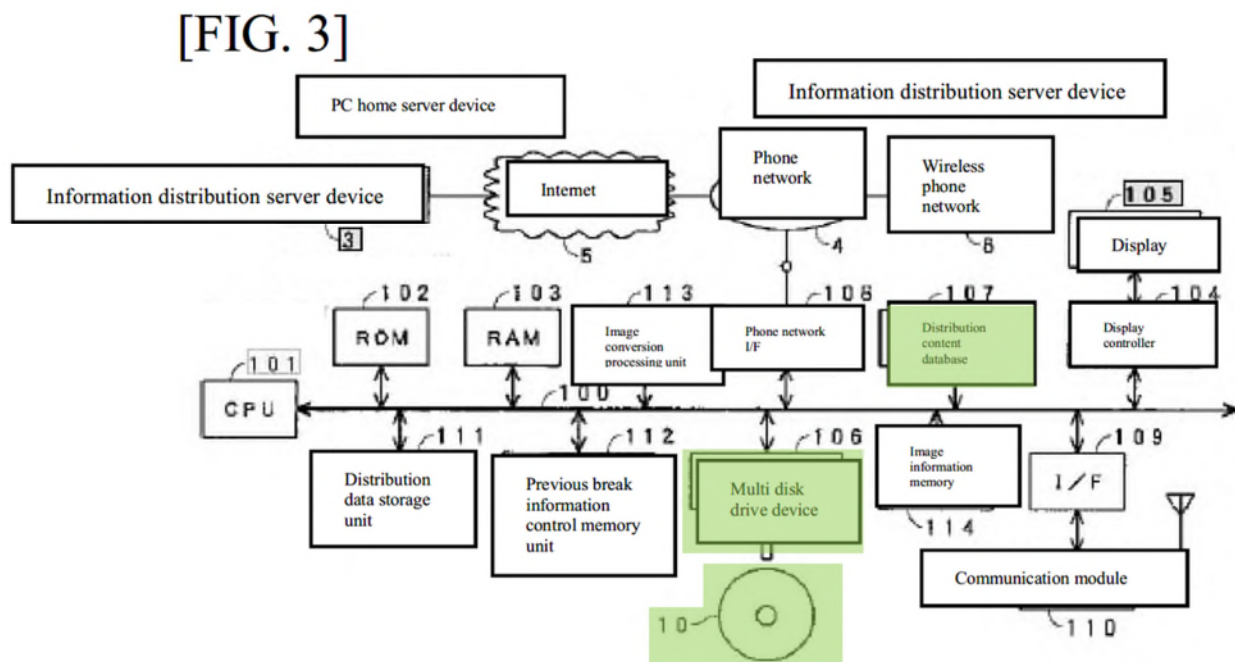
EX1002, ¶128.

4. [1c]

Sasaki discloses *wherein the main terminal (server device 1) comprises...a storage (distribution content database 107, multi disk drive device 106, and/or disks 110) storing the contents.* EX1006, ¶¶50-21, ¶¶64-66, ¶¶99-100, FIG. 3.

EX1002, ¶129.

Server device includes a storage (green):



EX1006, FIG. 3, ¶50, ¶51 (“server device 1 is equipped with a distribution information database”), ¶64 (PC home server device 1 includes “a multi-disk drive device 106 for driving disks 10 such as CD-ROMs” and “a distribution content database 107.”). Distribution content database 107 and/or disks 10 store contents.

EX1006, ¶65 (“distribution content database 107 for storing information on the content to be distributed”), ¶66 (“stores content information downloaded by the PC home server device 1 from the information distribution server 3...and content information read from the disc 10 via the multi-disc drive device 106”), ¶99 (“electronic newspapers are imported into the PC home server device 1...and stored in the distribution content database 107”), ¶100. EX1002, ¶130.

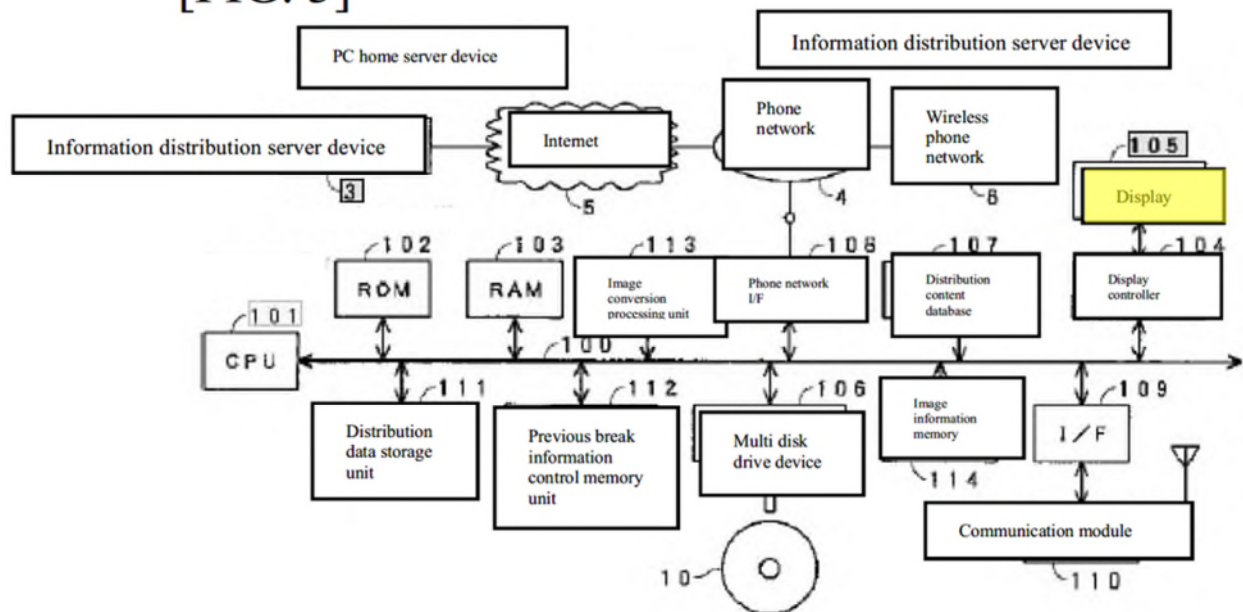
5. [1d]

Sasaki discloses *wherein the main terminal (server device 1) comprises...a first display (display 105) displaying the contents (electronic newspapers).*

EX1006, ¶65, FIG. 3. EX1002, ¶131.

Server device 1 includes a display (yellow):

[FIG. 3]



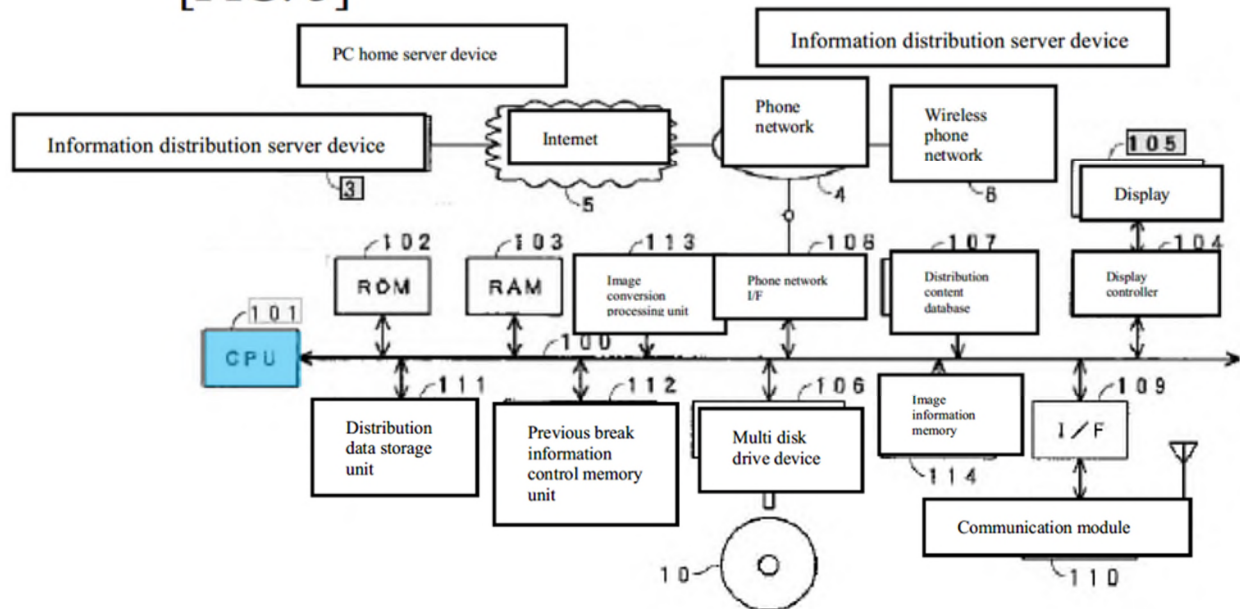
EX1006, FIG. 3, ¶65 (PC home sever device 1 includes “a display controller 104 that connects a display 105”). A POSITA would have understood and found obvious that display device 1 is capable of displaying contents because server device 1 is described as a personal computer with a display 105 and a display controller 104, and server device 1 stores the contents in its distribution content database. §V(B)(4) (limitation 1c). A POSITA would have therefore found it at least obvious or at most inherent that Sasaki’s server device 1 can display the electronic newspaper it has stored on its own display so the user of server device 1 could view it. EX1002, ¶132.

6. [1e]

Sasaki discloses *wherein the main terminal* (server device 1) *comprises...a first controller* (CPU 101) *controlling transmission/reception with the subsidiary terminals* (PDAs 2). EX1006, ¶55, ¶¶64-65, ¶68, ¶70, ¶124, ¶¶126-127, ¶138, FIG. 3. EX1002, ¶133.

Sasaki’s Server device 1 includes a CPU 101 (blue) that performs various distribution processing procedures:

[FIG. 3]



EX1006, FIG. 3 (CPU 101), ¶65 (PC home sever device 1 includes “CPU (Central Processing Unit) 101”), ¶70 (“ROM 102 stores a program that allows the CPU 101 to execute a series of information distribution processing procedures described later”). EX1002, ¶134.

CPU 101 controls the transmissions to PDAs 2. EX1006, ¶70 (“ROM 102 stores a program that allows the CPU 101 to execute a series of information distribution processing procedures”), ¶124 (“The processing of each step of this flowchart is mainly performed by the CPU 101 of PC home server device 1”), ¶138 (“When it is determined in step S322 that a distribution start request has been received, the CPU 101 reads the content segment data from the distribution data memory 111 and transmits it to the PDA2 via the communication module”), ¶55

(“home server device 1 extracts the free memory capacity of the memory area of the PDA 2 that receives the distribution information from the distribution request, generates a transmission information segment, which is distribution information of a capacity that matches the free capacity, from the information of the content specified by the content identification information, and transmits the generated transmission information segment to the PDA 2”), ¶64. EX1002, ¶135.

CPU 101 controls the receptions from PDAs 2. EX1006, ¶70 (“ROM 102 stores a program that allows the CPU 101 to execute a series of information distribution processing procedures described later”), ¶68 (“server device 1 receives a distribution request from the PDA 2 connected by wireless LAN through the communication module 110”), ¶124 (“processing of each step of this flowchart is mainly performed by the CPU 101 of PC home server device 1”), ¶126 (“Then it is determined whether or not a request for a distribution service has been received from the PDA 2 (step S305), and if the request is for a service other than the distribution service, the step proceeds to a routine for executing the requested other service (step S306)”), ¶127 (“When it is determined in step S305 that a request for a distribution service has been received from the PDA2”). EX1002, ¶136.

7. [1f]

Sasaki discloses *wherein the first controller (CPU 101) is configured to...store a plurality of device specific identification (ID) information (device-*

specific terminal identification information) *of the subsidiary terminals* (PDAs 2).

EX1006, ¶¶52-53, ¶77, ¶128, ¶139, ¶142. EX1002, ¶137.

CPU 101 stores device-specific terminal identification information that identifies PDAs 2. EX1006, ¶¶52-53 (“PDA2[sic] transmits to the PC home server device1[sic]...distribution request source identification information” which can take the form of “device-specific terminal identification information such as the serial number of the PDA2[sic]”), ¶77 (“Under the control of the CPU 101...memory unit 112 stores and manages, for each terminal identification information of each PDA 2, the delimiter information for the transmission information segment last distributed for each content previously distributed to the PDA 2 as the previous delimiter information”), ¶128 (“CPU 101 of the PC home server device 1 searches the contents stored in the previous break information control memory unit 112...using the received content identification information and distribution request source identification information, in the present example, the terminal identification information of the PDA 2”), ¶139 (“the last part of the content segment...is stored as the previous delimiter information in the previous delimiter information control memory 112 in correspondence with the terminal identification information and content identification information of the PDA 2”), ¶142 (“PC home server device 1 stores and manages the delimiter information in association with the content identification information and the distribution

requester identification information such as the terminal identification information of the PDA 2”). EX1002, ¶138.

8. [1g]

Sasaki discloses *wherein the first controller (CPU 101) is configured to...store a plurality of content information for identifying each of the contents* (content identification information). EX1006, ¶¶99-100, ¶¶128-130, ¶139, ¶142. EX1002, ¶139.

CPU 101 stores content identification information. EX1006, ¶142 (“server device 1 stores and manages the delimiter information in association with the content identification information and the distribution requester identification information such as the terminal identification information of the PDA 2”), ¶139 (“last part of the content segment to be sent...is stored as the previous delimiter information in the previous delimiter information control memory 112 in correspondence with the terminal identification information and content identification information of the PDA 2”), ¶128 (“user selects the content requested for distribution on the PDA2, and transmits the identification information (content ID) of the selected content, the terminal identification information (terminal ID) of the PDA2, the free memory capacity of the content area, and the display information of the PDA2, so that the PC home server device1 receives this information”), ¶129 (“CPU 101 of the PC home server device 1

searches the contents...for...the same content identification information using the received content identification information”), ¶130 (“in step S310, if the previous delimiter information for the same distribution requester identification information and the same content identification information is found, the step proceeds to step S312” in which “the distribution content database 107 is searched for the content specified by the content identification information received in step S308”), ¶100 (“Information on electronic novels and CD comics is imported from the disk through the multi-disk drive device 106 and stored in the distribution content database 107. In electronic novels, content identification information is assigned to each novel. In the case of CD comics, content identification information is assigned to each information unit from one CD or each performance”), ¶99 (“In the electronic newspapers, different content identification information is assigned to each piece of information each day. Therefore, the content identification information changes with each passing day”). EX1002, ¶140.

9. [1h]

Sasaki discloses *wherein the first controller (CPU 101) is configured to...store association information (delimiter information) for transmitting one of the contents (e.g., lines of an electronic newspaper) to one of the subsidiary terminals (PDA 2)*. EX1006, ¶57, ¶72, ¶78. EX1002, ¶141.

CPU 101 stores device identification information, content identification information, and delimiter information. §§V(B)(7)-(B)(8) (limitations 1f-1g); EX1006, ¶57 (“server device 1 stores in memory previous delimiter information for identifying the last part of the transmission information segment previously transmitted for each distribution request source identification information”), ¶57 (“server device 1 reads from the memory the previous delimiter information of the content specified by the content identification information”), ¶72 (“If delimiter information is assigned in advance by numbers or the like for each article, paragraph, chapter, etc., the information such as numbers can be managed as the delimiter information. However, when there is no delimiter information such as numbers, the information of the last paragraph, chapter, or the last few lines of the transmission information segment is used as the delimiter information”), ¶78 (“CPU 101 generates the current transmission information segment by referring to the previous delimiter information in the previous break information control memory unit 112”). EX1002, ¶142.

CPU 101 uses delimiter information for transmitting content to a PDA. EX1006, ¶57 (“server device 1 then reads from the memory the previous delimiter information of the content specified by the content identification information included in the distribution request, generates the current transmission information

segment from the delimiter position indicated by the previous delimiter information, and distributes it to the PDA 2”). EX1002, ¶143.

10. [1i]

Sasaki discloses *wherein the association information* (delimiter information) *defines that one* (e.g., a portion of content) *of the contents* (e.g., electronic newspaper or book) *identified by the content information* (content identification information) *is associated with one of the device specific ID information* (device-specific terminal identification information). §§V(B)(7)-(8) (limitations 1f-1g). EX1006, ¶¶52-23, ¶57, ¶¶129-139, FIGS. 11-12. EX1002, ¶144.

CPU 101 uses delimiter information to identify that a portion (e.g., lines of a newspaper, chapters in a book) of the contents identified by the content identification information is associated with one of the PDAs identified by the device identification information when determining the next portion of content to send to the PDA. EX1006, ¶57 (“server device 1 then reads from the memory the ***previous delimiter information*** of the content specified by the ***content identification information*** included in the distribution request, generates the current transmission information segment from the delimiter position indicated by the previous delimiter information, and distributes it to the PDA 2”), ¶¶52-53 (“PDA2[sic] transmits to the PC home server device1[sic] a ***content distribution request that comprises***...distribution request source identification information”

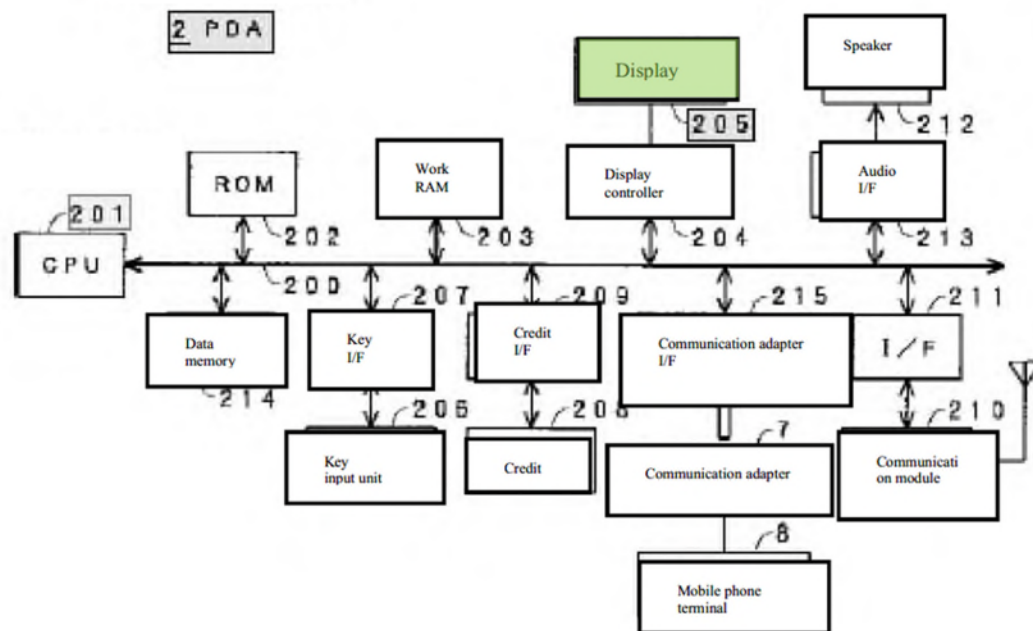
which can take the form of “***device-specific terminal identification information*** such as the serial number of the PDA2[sic]”), ¶129 (“CPU 101 of the PC home server device 1 searches the contents stored in the previous break information control memory unit 112 for previous delimiter information for the same distribution request source identification information and the same content identification information using the received content identification information and distribution request source identification information, in the present example, the terminal identification information of the PDA 2 (step S309), and determines whether the previous delimiter information was found as a result of the search (step S310)”), ¶¶130-139, FIGS. 11-12. EX1002, ¶145.

11. [1j]

Sasaki discloses *wherein the plurality of subsidiary terminals (PDAs 2) comprise...a second display (display 205) displaying the content.* EX1006, ¶60, ¶79, ¶105, FIG. 4. EX1002, ¶146.

PDA includes a display 205 (green):

[FIG. 4]



EX1006, FIG. 4, ¶79 (PDA 2 is shown to include “a display controller 204 for connecting a display 205”), ¶60 (“delivery request from the PDA 2 comprises information on the display of the PDA 2” and “comprises, for example, the number of vertical and horizontal pixels on the display screen, and the bit depth...[to] enable[] PC home server device 1 to know the image size that can be displayed on one screen”), ¶105 (“home server device 1 generates a transmission information segment for the current transmission...that is...converted to fit the display 214 based on the display information”). EX1002, ¶147.

12. [1k]

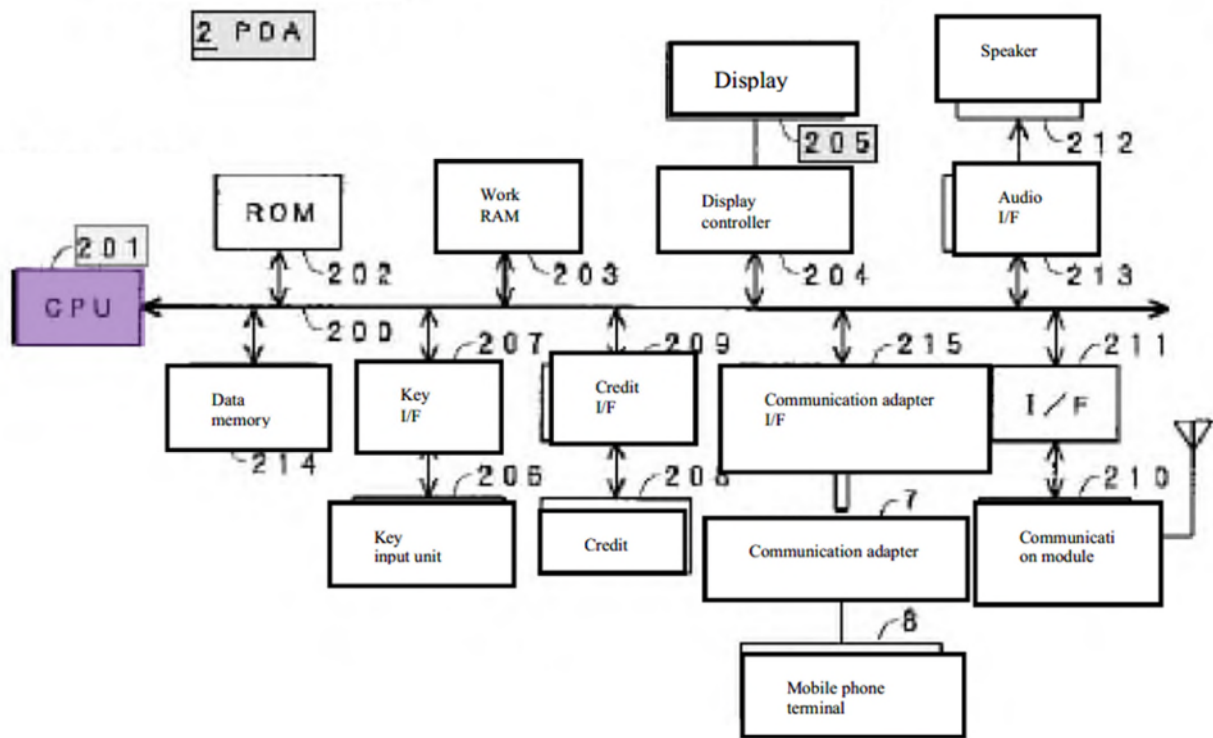
Sasaki discloses this limitation. EX1006, ¶79, ¶¶93-94, ¶¶97-98, ¶104, ¶117, ¶121, ¶128, ¶149, ¶150, FIGS. 7-8. EX1002, ¶148.

Sasaki discloses *wherein the plurality of subsidiary terminals (PDAs)*

comprise...a second controller (CPU 201). EX1006, ¶79, FIG. 4. PDA includes

CPU 201 (purple):

[FIG. 4]



EX1006, FIG. 4, ¶79 (“FIG. 4 shows an example of the configuration of a PDA 2” which is shown to include “CPU 201”). EX1002, ¶149.

Sasaki discloses *a second controller (CPU 201) controlling transmission...with the main terminal (server device 1).* EX1006, ¶¶93-94, ¶121, FIGS. 7-8. CPU 201 controls performance of the steps illustrated in FIGS. 7-8, which include transmissions with server device 1. EX1006, ¶93 (“FIGS. 7 and 8

are flowcharts for explaining the processing of the PDA 2 when a distribution request is issued to the PC home server device 1” and “[t]he processing of this flowchart is mainly performed by the CPU 201 of the PDA 2”), ¶94 (“When the user instructs the PDA2 to access the PC home server device1 using a touch pen or the like, the distribution request step of the PDA2 starts from the start of FIG. 7, and the CPU201 accesses the PC home server device1 using the communication module 110 (step S201”), ¶121 (“CPU 201 transmits a request to start distribution of the content segment for the selected content to the PC home server device 1 (step S230)”), FIGS. 7-8. EX1002, ¶150.

Sasaki discloses *a second controller (CPU 201) controlling...reception with the main terminal (server device 1)*. EX1006, ¶¶93, ¶¶97-98, ¶117, FIGS. 7-8. CPU 201 controls performance of the steps illustrated in FIGS. 7-8, which include reception with server device 1. EX1006, ¶93 (“FIGS. 7 and 8 are flowcharts for explaining the processing of the PDA 2 when a distribution request is issued to the PC home server device 1 and the requested content information is received” and “[t]he processing of this flowchart is mainly performed by the CPU 201 of the PDA 2”), ¶97 (“When the authentication is OK in step S204, a menu screen for services such as downloading is sent from the PC home server device 1, and this menu screen is received and displayed on the display 205”), ¶98 (“a list screen of distributable contents is sent from the PC home server device 1, which the PDA 2

receives and displays on the screen of the display 205 (step S209)”, ¶117 (“When the PC home server device 1 receives a request for a content segment with a delimiter based on the delimiter candidate requested for change, it regenerates the content segment to be sent this time as requested and transmits it to the PDA 2. The PDA 2 receives it in step S221 and displays it on the display screen 23 for delimiter confirmation information on the display 214”). EX1002, ¶151.

Sasaki discloses *the second controller (CPU 201) storing device specific ID information (terminal ID) for identifying the subsidiary terminal (PDA)*. EX1006, ¶104, ¶128, ¶149. CPU 201 stores a terminal ID that identifies the PDA of CPU 201. EX1006, ¶128 (“the user selects the content requested for distribution on the PDA2, and transmits the identification information (content ID) of the selected content, the terminal identification information (terminal ID) of the PDA2, the free memory capacity of the content area, and the display information of the PDA2, so that the PC home server device1 receives this information (step S308)”, ¶104 (“the content identification information (content ID), the terminal identification information (terminal ID), the free memory capacity of the content area of the data memory 214 at that time, and information about the display 214 are sent to the PC home server device 1 for a content distribution request”), ¶149 (“If the serial number stored in the ROM 202 of each PDA at the time of manufacture is used as this terminal identification information, the server device can recognize the display

capabilities of the display of the PDA terminal by storing this serial number and information about the display of the PDA terminal as a terminal information database”). EX1002, ¶152.

Sasaki discloses *the second controller (CPU 201)...transmitting the device specific ID information (terminal ID) to the main terminal (server device 1) when connecting to the main terminal (server device 1)*. EX1006, ¶94, ¶104, ¶150. CPU 201 sends the PDA’s terminal ID to server device 1 when PDA connects to server device 1. EX1006, ¶94 (“When the user instructs the PDA2 to access the PC home server device1...the terminal identification information or user identification information stored in the ROM202 or RAM203 is read and sent as information for authentication”), ¶150 (“terminal identification information of the PDA 2 is transmitted to the PC home server device 1 as distribution request source identification information when making a distribution request”), ¶104. EX1002, ¶153.

13. [11]

Sasaki discloses this limitation. EX1006, ¶44, ¶54, ¶94, ¶¶77-78, ¶131. EX1002, ¶154.

Sasaki discloses *wherein, the main terminal (server device 1) determines whether it is possible to connect to the subsidiary terminal (PDA) storing the device specific ID information (terminal ID)*. EX1006, ¶44, ¶54, ¶94. Server device

1 determines whether it is possible to connect to the PDA during its authentication process. EX1006, ¶44 (“when the PC home server device 1 is accessed by the PDA 2, it performs authentication based on authentication data such as registered user identification information, terminal identification information, and PIN number, and executes information distribution as described below only for PDAs 2 that have been authenticated”), ¶54 (“When the PC home server device1 receives a content distribution request from the PDA2 as a personal digital assistant, it authenticates the PDA2”), ¶94 (“When the user instructs the PDA2 to access the PC home server device1... terminal identification information or user identification information stored in the ROM202 or RAM203 is read and sent as information for authentication”). Furthermore, as previously discussed, the PDA stores its terminal ID. See §V(B)(12) (limitation 1k). EX1002, ¶155.

Sasaki discloses *the main terminal* (server device 1)...*transmits the content* (e.g., electronic newspaper) *stored in the storage* (distribution content database 107) *to the subsidiary terminal* (PDA) *which can be connected, based on the association information* (delimiter information). EX1006, ¶¶77-78, ¶131.

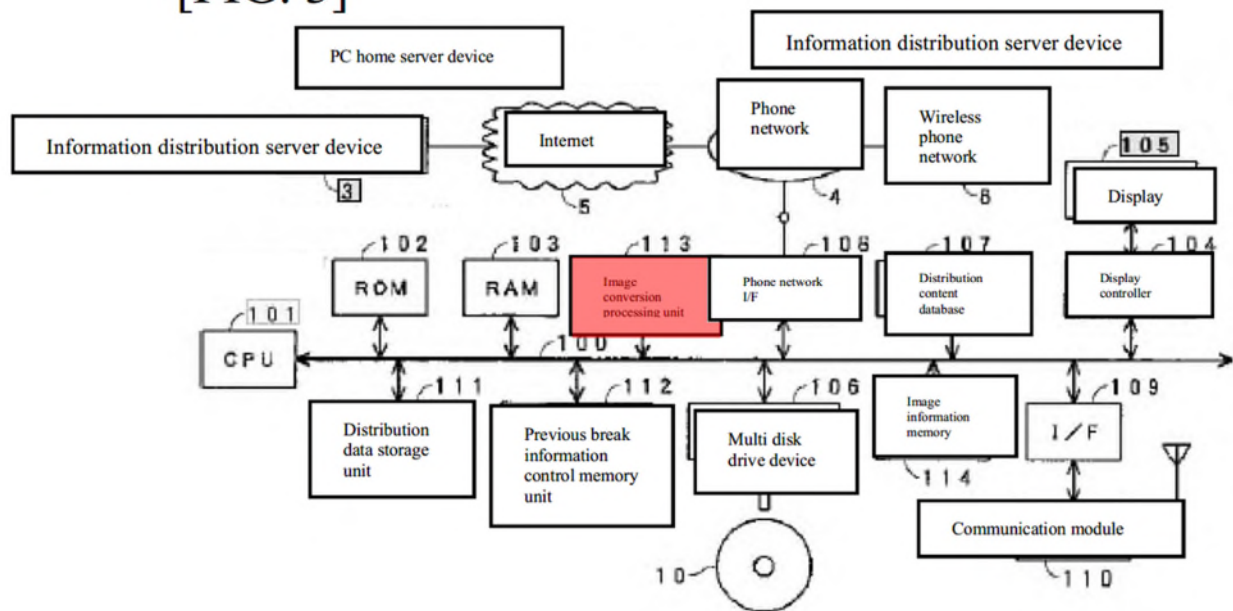
Following connection with the PDA, Sasaki’s server device 1 uses the delimiter information to determine the next segment of content to send to the PDA. EX1006, ¶77 (“Under the control of the CPU 101, the previous break information control memory unit 112 stores and manages, for each terminal identification of each PDA

2, the delimiter information for the transmission information segment last distributed for each content previously distributed to the PDA 2 as the previous delimiter information”), ¶78 (“In response to a distribution request for content previously requested for distribution, the CPU 101 generates the current transmission information segment by referring to the previous delimiter information in the previous break information control memory unit 112”), ¶131 (“distribution content database 107 is searched for the content specified by the content identification information received in step S308, and the content segment for the current transmission is calculated from the searched content based on the free memory capacity of the content area received in step S308 and the previous delimiter information”). EX1002, ¶156.

C. Claim 2

Sasaki renders this claim obvious. EX1002, ¶¶157-158; §V(B) (claim 1). Sasaki discloses *wherein the main terminal* (server device 1) *includes a converter* (image conversion processing unit 113) *down-converting the content* (e.g., electronic newspaper) *and transmits the down converted content* (e.g., converted electronic newspaper) *to the subsidiary terminal* (PDA). Sasaki’s server device 1 includes “image conversion processing unit 113” (red) for converting (e.g., down-converting) the content:

[FIG. 3]



EX1006, FIG. 3, ¶65 (“FIG. 3 shows an example of the configuration of PC home server device1[sic]” which is shown to include “image conversion processing unit 113”), ¶69 (“image conversion processing unit 113 is a processing unit that converts the transmission data to match the display capabilities, etc., based on the display information”), ¶64 (“server device 1 extracts information about the display of the PDA 2 from the distribution request, and if the distribution information is display information, it also converts the information to be distributed into information that matches the display capabilities of the PDA 2 that made the distribution request, and transmits it”), ¶¶60-62. EX1002, ¶159.

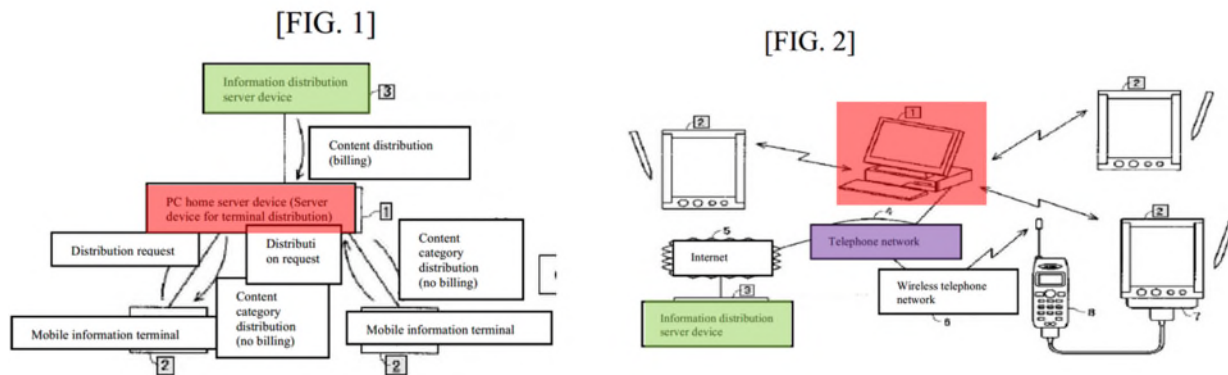
Server device 1 then sends the down-converted content to the PDA.

EX1006, ¶62 (“PC home server device 1 will convert the data of the transmission information segment to be distributed into an image format suitable for the display

of PDA 2”), ¶105 (“the PC home server device 1 generates a transmission information segment for the current transmission...converted to fit the display 214 based on the display information”), ¶132, ¶144. EX1002, ¶160.

D. Claim 3

Sasaki renders this claim obvious. EX1002, ¶¶161-162; §V(B) (claim 1). Sasaki discloses *wherein the main terminal (server device 1) includes a network interface (telephone network interface 108) and acquires content (e.g., electronic newspaper) from an external server (information distribution server device 3) via the network interface (telephone network interface 108)*. Server device 1 (red) communicates with information distribution server device 3 (green) via telephone network 104 (purple) to receive the contents:

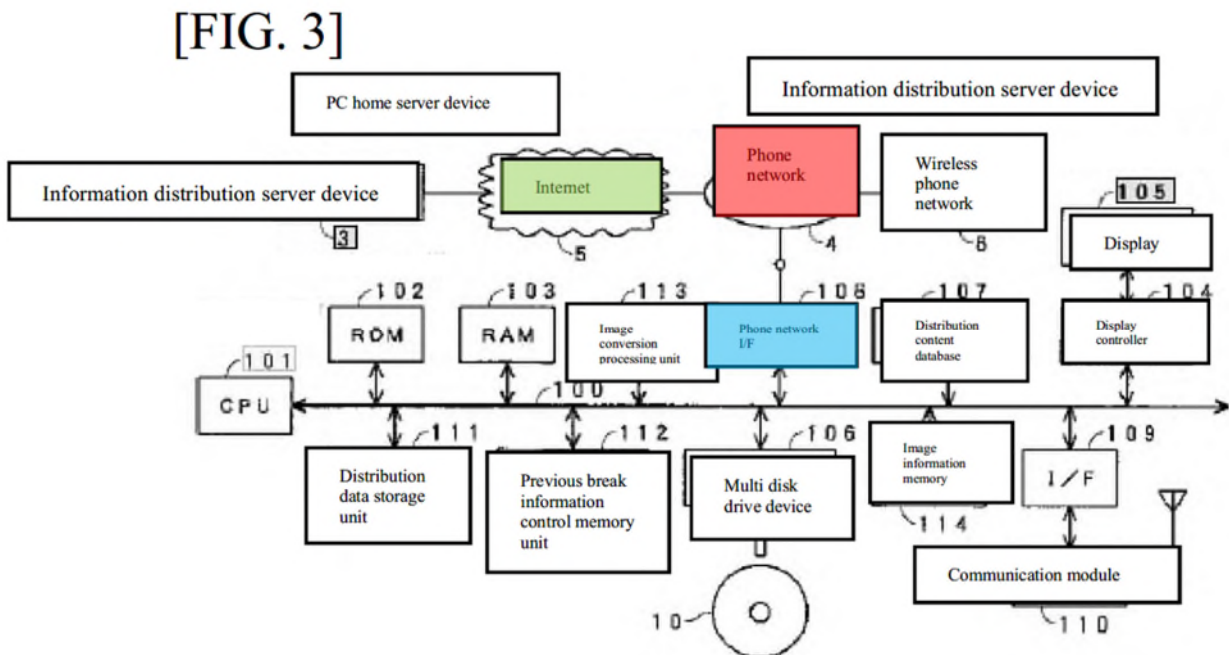


EX1006, FIGS. 1-2, ¶40 (“FIG. 2 is a diagram showing the overall outline... of the information distribution system” that includes “server device 1” and “information distribution server device [which] is a Web server device 3 on the Internet”), ¶46 (“information distribution server device 3 and the PC home server device 1 are

connected via the Internet 5 and the public telephone network 4”), ¶47

(“information distribution server device 3 distributes content information periodically or upon request from the PC home server device 1”), ¶51 (“server device 1 is equipped with a distribution information database, and stores and holds content information such as electronic newspapers obtained from the information distribution server 3 via the Internet 5”). EX1002, ¶163.

Server device 1 includes a telephone network interface 108 for connecting to the public telephone network 4 and Internet 5:



EX1006, FIG. 3, ¶65 (“PC home server device1[sic]” is shown in include “interface 108 for connecting to the public telephone network 4”), ¶46 (“information distribution server device 3 and the PC home server device 1 are connected via the Internet 5 and the public telephone network 4”). EX1002, ¶164.

E. Claim 4

Sasaki renders claim 4 obvious. EX1002, ¶165.

1. [4pre]-[4a]

Sasaki discloses these limitations. §§V(B)(1)-(2) (limitations 1pre-1a).

EX1002, ¶¶166-167.

2. [4b]

This limitation has been recast from “a plurality of subsidiary terminals” to “first subsidiary terminal.” Nevertheless, Sasaki discloses this limitation. §V(B)(3) (limitation 1b). EX1002, ¶168.

3. [4c]

This limitation has been recast from “a plurality of subsidiary terminals” to “second subsidiary terminal.” Nevertheless, Sasaki discloses this limitation. §V(B)(3) (limitation 1b). EX1002, ¶169.

4. [4d]-[4e]

Sasaki discloses these limitations. §§V(B)(4)-(5) (limitation 1c-1d). EX1002, ¶¶170-171.

5. [4f]

This limitation has been recast from reciting “with the subsidiary terminals” to “with the first subsidiary terminal and the second subsidiary terminal.” Nevertheless, Sasaki discloses this limitation. §V(B)(6) (limitation 1e). EX1002, ¶172.

6. [4g]

This limitation has been recast from reciting “a plurality of device specific identification (ID) information of the subsidiary terminals” to “with the first subsidiary terminal and the second subsidiary terminal.” Nevertheless, Sasaki discloses this limitation. §V(B)(7) (limitation 1f). EX1002, ¶173.

7. [4h]

This limitation has been recast from reciting “a plurality of content information” to “first content information for identifying first content among the contents and second content information for identifying second content among the contents.” Nevertheless, Sasaki discloses this limitation. §V(B)(8) (limitation 1g). EX1002, ¶174.

8. [4i]

This limitation has been recast from reciting “store association information for transmitting one of the contents to one of the subsidiary terminals” to “store association information for transmitting one of the first content or the second content to one of the first subsidiary terminal or the second subsidiary terminal.” Nevertheless, Sasaki discloses this limitation as “one of the first content or the second content” is the same as “one of the contents” and “one of the first subsidiary terminal or the second subsidiary terminal” is the same as “to one of the subsidiary terminals.” §V(B)(9) (limitation 1h). EX1002, ¶175.

9. [4j]

This limitation has been recast from reciting “the association information defines that one of the contents identified by the content information is associated with one of the device specific ID information” to “the association information defines that one of the first content or the second content is associated with one of the first device specific ID information or the second device specific ID information.” Nevertheless, Sasaki discloses this limitation as “one of the first content or the second content” is the same as “one of the contents” and “one of the first device specific ID information or the second device specific ID information” is the same as “one of the subsidiary terminals.” §V(B)(10) (limitation 1i). EX1002, ¶176.

10. [4k]-[4p]

Sasaki discloses these limitations. §§V(B)(11)-(13) (limitation 1j-1l). EX1002, ¶¶177-182.

VI. GROUND 3: CLAIMS 1-4 ARE OBVIOUS IN VIEW OF FUTA AND MCCLELLAN

A. Futa

U.S. Patent Appl. Pub. No. 2004/0010687 (“Futa”) was filed June 10, 2003, and published January 15, 2004. EX1009, cover page. Futa is prior art under 35 U.S.C. §§102(a), (b), (e) (pre-AIA). EX1002, ¶183.

Futa discloses a content distributing system 1 for distributing content to viewers. EX1009, ¶49 (“FIG. 1 shows the construction of the content distributing

system 1” which includes “broadcast receiving device 10, a TV (television) 20, a PC (personal computer) 30, a data-communication controlling device 40, a table updating server 50, and a broadcast device 60”). Broadcast receiving device 10 and data-communication controlling device 40 function as a main terminal that receives content from broadcast device 60 and distributes that content to a plurality of subsidiary devices (e.g., TV 20, PC 30). EX1009, ¶50 (“broadcast receiving device 10 receives and stores content that is broadcasted from the device 60...receives a request for playing back content...from the TV 20 or the PC 30...and transmits the requested content to the data-communication controlling device 40”). EX1002, ¶184.

Futa is analogous art to the ’650 patent and was not considered during prosecution of the ’650 patent. EX1002, ¶¶185-186.

B. McClellan

U.S. Patent No. 5,619,250 (“McClellan”) was filed June 7, 1995, and published April 8, 1997. EX1010, cover page. McClellan is prior art under 35 U.S.C. §§102(a), (b), (e) (pre-AIA). EX1002, ¶187.

McClellan is generally directed to “set top boxes for use in an interactive television system.” EX1010, 1:26-27. McClellan’s set top box includes “a minimal system...which provides just enough functionality for the set top box to connect with the interactive television system.” EX1010, 3:23-26. EX1002, ¶188.

McClellan discloses that set top boxes can be incorporated inside the television.

EX1010,

McClellan is analogous art to the '650 patent and was not considered during prosecution of the '650 patent. EX1002, ¶¶189-190.

C. Motivation to Combine

A POSITA would have been motivated to modify the teachings of Futa (§VI(A)) based on the teachings of McClellan §(VI(B)) because Futa discloses components – broadcast receiving device 10 and data-communication controlling device 40 – that function as a main terminal and McClellan discloses a main terminal in the form a multi-media computer otherwise referred to as a set-top box. EX1010, 1:64-66 (“computer/decoders for the interactive television systems have become known as set top boxes”), 2:46-58. It was well-known in the art, as of the alleged date of the invention of the '650 patent, that set-top boxes function as general purpose computers with the extra functionality of a TV tuner. *See, e.g.*, EX1011, ¶11 (“Set-top box essentially has the same basic components as the general purpose computer illustrated in FIG. 1, except that it also includes a TV tuner for receiving broadcast and/or cable TV signals”). From this, a POSITA would have been motivated by the teachings of McClellan to incorporate Futa’s broadcast receiving device 10 and data-communication controlling device 40 into a television because Futa’s broadcast receiving device and data-communication

controlling device 40 collectively function as a set top box as known in the art.

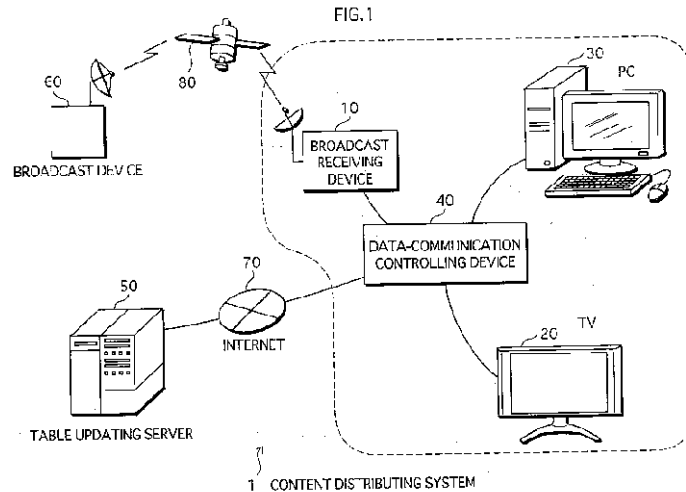
EX1009, ¶53 (“broadcast receiving device 10 functions as a server”), ¶¶277-280, ¶56 (“receiving unit 101 includes an antenna, and receives, via the antenna, a digital broadcast wave that is broadcasted from the broadcast device 60 via the broadcast satellite 80”), FIG. 2. Such a combination involves the simple movement of components (broadcast receiving device 10, data-communication controlling device 40) into a television system (McClellan’s television system) to obtain predictable results (providing consumers with a television system that includes an integrated set top box). A POSITA would have had a reasonable expectation of success in making the proposed combination given the teachings of Futa and McClellan, as guided by Cooper. Such a combination would have required minimal modifications to Futa, and thus would have been well within the skillset of a POSITA. The proposed combination would not have required undue experimentation and would have yielded predictable results. EX1002, ¶195.

D. Claim 1

Futa renders this claim obvious alone or in combination with McClellan. EX1002, ¶197.

1. [1pre]

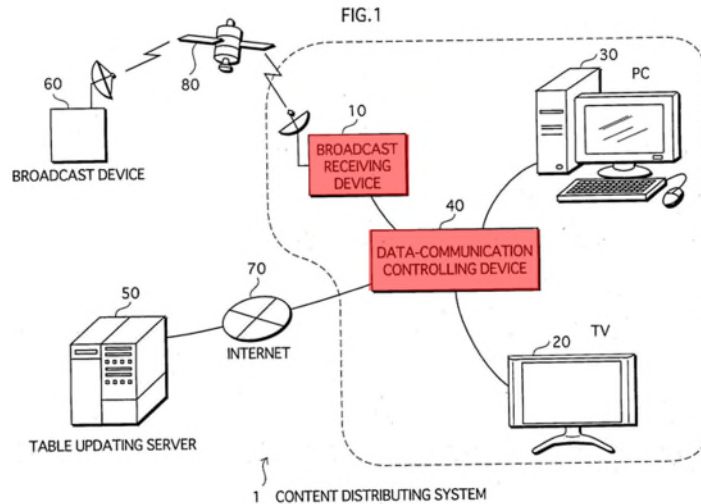
Futa discloses *a contents reproducing system* (content distribution system 1):



EX1009, FIG. 1, ¶49 (“content distributing system 1...composed of a broadcast receiving device 10, a TV...20, a PC...30, a data communication controlling device 40, a table updating server 50, and a broadcast device 60”), ¶50 (“broadcast receiving device 10 receives and stores content that is broadcasted from the device 60...receives a request for playing back content...from the TV 20 or the PC 30...and transmits the requested content to the data-communication controlling device 40”), ¶53, ¶264. EX1002, ¶198.

2. [1a]

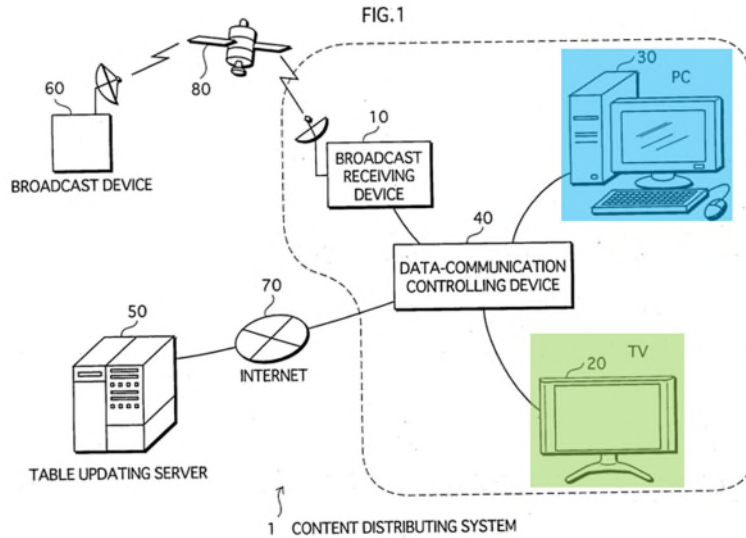
Futa discloses a *main terminal* (collectively, broadcast receiving device 10, data-communication controlling device 40 (both red)):



EX1009, ¶ 49 (“content distributing system 1...composed of a broadcast receiving device 10..., a data communication controlling device 40”), ¶264 (“The present invention also includes the construction where the broadcast receiving device 10 includes the data-communication controlling device 40...the broadcast receiving device 10 may have a construction and function of the data-communication controlling device 40”). EX1002, ¶199.

3. [1b]

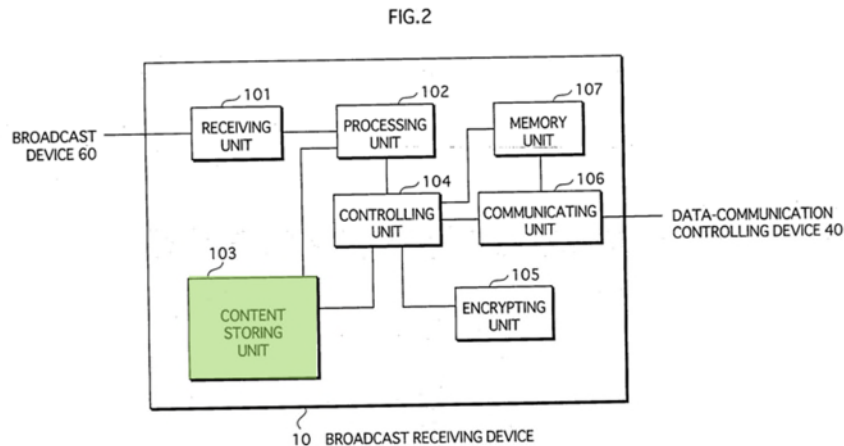
Futa discloses *a plurality of subsidiary terminals* (PC 30 (blue), TV 20 (green)):



EX1009, FIG. 1, ¶49 (“content distributing system 1...composed of...a TV...20, a PC...30”), ¶50 (“broadcast receiving device 10 receives...a request for playing back content...from the TV 20 or the PC 30”), FIGS. 4-5. EX1002, ¶200.

4. [1c]

Futa discloses *wherein the main terminal* (collectively, broadcast receiving device 10, data-communication controlling device 40) *comprises...a storage* (content storing unit 103 (green)) *storing the contents* (content):



EX1009, FIG. 2, ¶60 (“stores content that is outputted from the processing unit 102”). EX1002, ¶¶201-202.

5. [1d]

Futa-McClellan combination discloses *wherein the main terminal* (broadcast receiving device 10, data-communication controlling device 40) *comprises...a first display* (TV display) *displaying the contents* (content). EX1009, ¶53, ¶56, ¶¶277-280, FIG. 2; EX1010, 2:1-5, EX1011, ¶11; §VI(C) (motivation to combine). EX1002, ¶203.

Futa discloses broadcast receiving device 10 and data-communication controlling device 40. §VI(D)(2) (limitation 1a). While Futa does not explicitly disclose that broadcast receiving device 10 and data communication controlling device 40 have a display for displaying contents, McClellan does. EX1002, ¶204.

McClellan discloses that interactive television systems, such as set-top boxes, can reside inside the television housing itself. EX1010, 2:1-5. As the foregoing indicates, set-top boxes were well known as of the alleged date of invention and function like a general-purpose computer with the added functionality of a tuner. §VI(C) (motivation to combine); EX1011, ¶11 (“Set-top box essentially has the same basic components as the general purpose computer illustrated in FIG. 1, except that it also includes a TV tuner for receiving broadcast and/or cable TV signals”). Futa’s broadcast receiving device 10 and data-

communication controlling device 40 function as a general-purpose computer with the added functionality of receiving unit 101 for receiving broadcast TV signals from broadcast device 60. EX1009, ¶53 (“broadcast receiving device 10 functions as a server”), ¶¶277-280, ¶56 (“receiving unit 101...receives, via the antenna, a digital broadcast wave that is broadcasted from the broadcast device 60”), FIG. 2. Therefore, a POSITA would have understood and found obvious to modify Futa’s content distribution system to have broadcast receiving device 10 and data-communication controlling device 40 incorporated into a television, which would include a display. EX1002, ¶205.

A POSITA would have understood and found obvious that Futa’s modified main terminal is capable of displaying contents because Futa’s main terminal can display the contents it has stored on its own display. EX1002, ¶206.

6. [1e]

Futa discloses *wherein the main terminal* (broadcast receiving device 10, data-communication controlling device 40) *comprises...a first controller* (collectively, controlling unit 104, communication controlling unit 407) *controlling transmission/reception with the subsidiary terminals* (TV 20, PC 30). EX1009, ¶54, ¶68, ¶138, ¶¶141-143, ¶161, FIG. 6. EX1002, ¶207.

Futa’s broadcast receiving terminal 10 includes controlling unit 104. EX1009, ¶54, FIG. 6. Controlling unit 104 “controls the entire data-

communication controlling device 40 by its CPU executing a computer program stored in ROM.” EX1009, ¶68. Futa’s data-communication controlling device 40 includes communication controlling unit 407. EX1009, ¶138, FIG. 6.

Communication controlling unit 407 “controls the entire data-communication controlling device 40 by its CPU executing a computer program stored in ROM.” EX1009, ¶161. EX1002, ¶208.

Data-communication controlling device includes communicating units 402-403. EX1009, ¶138, FIG. 6. Communicating unit 402 sends transmissions to TV 20. EX1009, ¶142. Communicating unit 402 receives transmissions from TV 20. EX1009, ¶141. Communicating unit 403 sends transmissions to PC 30. EX1009, ¶143. Communication unit 403 receives transmissions from PC 30. EX1009, ¶143. EX1002, ¶209.

Therefore, controlling unit 104 and communication controlling unit 407 collectively control transmission/reception with the TV 20 and PC 30 (subsidiary terminals). EX1002, ¶210.

7. [1f]

Futa discloses *wherein the first controller* (collectively, communication controlling unit 407, controlling unit 104) *is configured to...store a plurality of device specific identification (ID) information* (device ID) *of the subsidiary*

terminals (TV 20, PC 30). EX1009, ¶¶140, 143, 169-171, FIGS. 7-8B. EX1002, ¶211.

Data-communication controlling device 40 receives device IDs from TV 20 and PC 30. EX1009, ¶140 (“communicating unit 402 receives the device ID ‘IDA’ and the certificate ‘CIDA’ from the TV 20”), ¶143 (“communicating unit 403 receives the device ID “IDB” and the certificate “CIDB” from the PC 30”). Data-communication controlling device 40 stores the device IDs of TV 20 and PC 30. EX1009, ¶169 (“communication controlling unit 407 internally prestores judgment tables ‘A’ and ‘B’” and “writes a device ID into the judgment tables “A” and/or “B”, every time a device establishes connection”, ¶¶170-171. FIGS. 7-8B (illustrating exemplary judgment tables). EX1002, ¶212.

8. [1g]

Futa discloses *wherein the first controller* (collectively, communication controlling unit 407, controlling unit 104) *is configured to...store a plurality of content information (content ID) for identifying each of the contents (contents).* EX1009, ¶54, ¶¶61-62, FIGS. 2-3. EX1002, ¶213.

Broadcast receiving device 10 includes a content storing unit 103 in which controlling unit 104 stores content IDs for the content. EX1009, ¶54 (. As shown FIG. 2, “broadcast receiving device 10 comprises a receiving unit 101, a processing unit 102, a content storing unit 103”), ¶61 (“content 150 shown in FIG.

3 is one example of content stored in the content storing unit 103” and “is composed of header information” which “includes ‘content ID’ 151”), ¶62 (“‘content ID’ is an ID used to uniquely identify content”), FIGS. 2-3. EX1002, ¶214.

9. [1h]

Futa discloses *wherein the first controller* (collectively, communication controlling unit 407, controlling unit 104) *is configured to...store association information* (judgment table) *for transmitting one of the contents* (content) *to one of the subsidiary terminals* (TV 20). EX1009, ¶169, ¶171, ¶¶211-212, FIG. 11. EX1002, ¶215.

Futa’s communication controlling unit maintains judgment tables for determining which content to send to TV 20 or PC 30. EX1009, ¶169 (“prestores judgment tables ‘A’ and ‘B’” and “writes a device ID into the judgment tables ‘A’ and/or ‘B’, every time...a device establishes connection”). Each judgment table is associated with a category of content deliverable to the device. EX1009, ¶171 (“communication controlling unit 407 reads category information included in the device ID...[w]hen the category information is ‘1’, the communication controlling unit 407 writes the device ID...into the judgment table ‘A’...[w]hen the category information is ‘2’, the communication controlling unit 407 writes the device ID...into both the judgment tables ‘A’ and ‘B’”). Communication controlling unit

uses the judgement tables for transmitting content to the requesting device.

EX1009, ¶211 (“communication controlling unit 407...refers to its internally-stored address conversion table, and obtains a device ID corresponding to the transmission target address received from the broadcast receiving device 10 (step S301)”), ¶211 (“communication controlling unit 407 reads additional information from header information included in the encrypted content received from the broadcast receiving device 10, and checks the additional information (step S302)”), ¶212 (“When the additional information is “1” (“1” in step S303), the communication controlling unit 407 reads the internally-stored judgment table “A” (step S304). When the additional information is “2” (“2” in step S303), the communication controlling unit 407 reads the internally-stored judgment table “B” (step S305)”), ¶212 (“device ID being included in the judgment table means that the content is permitted to be transmitted, whereas the device ID not being included in the judgment table means that the content is not permitted to be transmitted.”), FIG. 11. EX1002, ¶216.

10. [1i]

Futa discloses *wherein the association information (judgment table) defines that one of the contents (content) identified by the content information (content ID) is associated with one of the device specific ID information (device ID).*

§§VI(B)(7)-(8) (limitations 1f-1g). EX1009, ¶¶176-180, ¶¶205-207, ¶212, FIG. 11. EX1002, ¶217.

Futa's judgment tables define whether a device can receive the content that it requested. EX1009, ¶212 ("device ID being included in the judgment table means that the content is permitted to be transmitted, whereas the device ID not being included in the judgment table means that the content is not permitted to be transmitted."). In operation, "TV 20 or the PC 30 transmits a content request including as content ID, and its internally-stored network address, to the broadcast receiving device 10 via the data-communication controlling device." EX1009, ¶205. Broadcast receiving device 10 identifies the requested content based on the content ID and sends the requested content to data-communication controlling device 40. EX1009, ¶206 ("broadcast receiving device 10 reads content identified by the content ID included in the content request, from the content storing unit 103...encrypts the read content....[and] transmits the encrypted content and the transmission target address, to the data-communication controlling device 40"). Data-communication controlling device 40 uses the judgment tables to determine whether a device (e.g., TV 20, PC 30) is associated with the content based on the device ID of that device. EX1009, ¶¶176-180, ¶207 ("data-communication controlling device 40 judges whether the encrypted content is permitted to be

transmitted to a device having the received transmission target address”), FIG. 11.

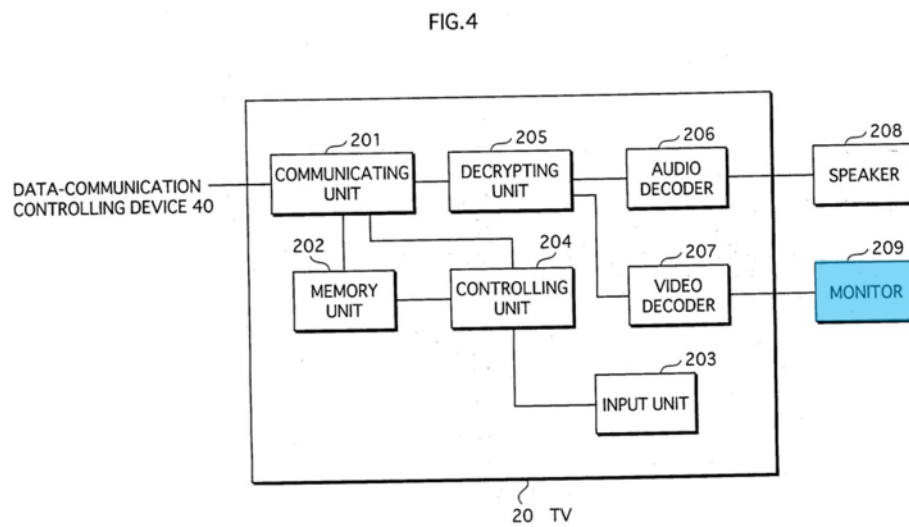
EX1002, ¶218.

11. [1j]

Futa discloses *wherein the plurality of subsidiary terminals (TV 20, PC 40) comprise...a second display (monitor 209) displaying the content (content).*

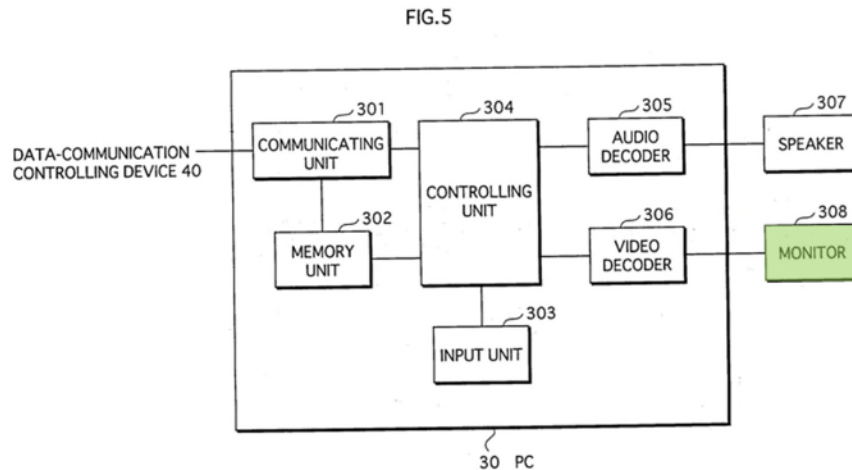
EX1009, ¶50, ¶86, ¶110, ¶113, ¶135, FIGS. 4-5. EX1002, ¶219.

TV 20 includes a monitor (blue) for displaying the content:



EX1009, FIG. 4, ¶86 (“ monitor 209”), ¶110 (“video decoder 207 receives a video stream from the decrypting unit 205, expands the received video stream to a video signal, and outputs the video signal to the monitor 209”), ¶50 (“TV 20, the PC 30...are devices placed in a home of the user who views and/or listens to content”). EX1002, ¶220.

PC 30 includes a monitor (green) for displaying the content:



EX1009, FIG. 5, ¶113 (“monitor 308”), ¶135 (“video decoder 306 receives a video stream from the controlling unit 304, expands the received video stream to a video signal, and outputs the video signal to the monitor 308”), ¶50. EX1002, ¶221.

12. [1k]

Futa discloses this limitation. EX1009, ¶86, ¶¶88-91, 94, ¶100, ¶¶113-118, ¶121, ¶127, FIGS. 4-5. EX1002, ¶222.

Futa discloses *wherein the plurality of subsidiary terminals* (TV 20, PC 30) *comprise...a second controller* (controlling unit 204, controlling unit 304) *controlling transmission/reception with the main terminal* (collectively, broadcast receiving device 10, data-communication controlling device 40). EX1009, ¶86, ¶88, ¶¶90-91, ¶100, ¶¶113-118, ¶127, FIGS. 4-5. EX1002, ¶223.

TV 20 includes controlling unit 204. EX1009, ¶86, FIG. 4. Controlling unit 204 “controls the entire TV 20 by its CPU executing a computer program stored in its ROM.” EX1009, ¶100. TV 20 includes communicating unit 201. EX1009, ¶86,

FIG. 4. Communicating unit 201 controls communications with data-communication controlling device 40. EX1009, ¶88 (“communicating unit 201 is a LAN-connected unit including an IEEE1394 connector and the like”), ¶90 (“communicating unit 201 receives a network address...from the data-communication controlling device 40”), ¶91 (“communicating unit 201...transmits the...content request and network address...to the data-communication controlling device 40”). EX1002, ¶224.

PC 30 includes controlling unit 304, EX1009, ¶113, FIG. 5, which “controls the entire PC 30 by its CPU executing a computer program stored in its ROM.” EX1009, ¶127. PC 30 includes communicating unit 301, which controls communications with data-communication controlling device 40. EX1009, ¶117 (“communicating unit 301 receives a network address...from the data-communication controlling device 40”), ¶118 (“communicating unit 301...transmits the...content request and network address...to the data-communication controlling device 40”), ¶113, FIG. 5. EX1002, ¶225.

Futa discloses *the second controller* (controlling unit 204, controlling unit 304) *storing device specific ID information* (device ID) *for identifying the subsidiary terminal* (TV 20, PC 30). EX1009, ¶89, ¶94, ¶116, ¶121. EX1002, ¶226.

Futa's controlling unit 204 stores its device ID that identifies itself – TV 20.

EX1009, ¶89 (“communicating unit 201 reads a device ID...stored in the memory unit 202”), ¶94 (“In the memory unit 202, the network address...the device ID...and the certificate...are stored”), ¶94 (“device ID...is composed of a MAC address assigned to a NIC at the time of manufacture, and category information indicating a category of the device”). Futa's controlling unit 304 stores its device ID that identifies itself – PC 30. EX1009, ¶116 (“communicating unit 301 reads a device ID...stored in the memory unit 202”), ¶121 (“In the memory unit 302, the network address...the device ID...and the certificate...are stored”), ¶121 (“device ID...is composed of a MAC address assigned to a NIC at the time of manufacture, and category information indicating a category of the device”). EX1002, ¶227.

Futa discloses *the second controller* (controlling unit 204, controlling unit 304)...*transmitting the device specific ID information* (device ID) *to the main terminal* (collectively, communication controlling unit 407, controlling unit 104) *when connecting to the main terminal* (collectively, broadcast receiving device 10, data-communication controlling device 40). EX1009, ¶89, ¶116. EX1002, ¶228.

Controlling unit 204 sends its device ID to data-communication controlling device 40 when connecting to data-communication controlling device 40. EX1009, ¶89 (“When the communicating unit 201 is newly connected to the home network by establishing connection to the data-communication controlling unit 40 via a

LAN cable, communicating unit 201 reads a device ID...and a certificate...stored in the memory unit 202, and transmits the read device ID ...and certificate...to the data-communication controlling device 40”). Controlling unit 304 sends its device ID to data-communication controlling device 40 when connecting to data-communication controlling device 40. EX1009, ¶116 (“When the communicating unit 301 is newly connected to the home network by establishing connection to the data-communication controlling unit 40 via a LAN cable, communicating unit 301 reads a device ID...and a certificate...stored in the memory unit 302, and transmits the read device ID ...and certificate...to the data-communication controlling device 40”). EX1002, ¶229.

13. [11]

Futa discloses this limitation. EX1009, ¶¶199-200, ¶¶205-206, ¶212. EX1002, ¶230.

Futa discloses *wherein, the main terminal* (broadcast receiving device 10, data-communication controlling device 40) *determines whether it is possible to connect to the subsidiary terminal* (TV 20, PC 40) *storing the device specific ID information* (device ID). EX1009, ¶¶199-200. EX1002, ¶231.

Futa’s data-communication controlling device 40 determines whether it is possible to connect to TV 20 or PC 30 based on the certificate received from TV 20 or PC 30. EX1009, ¶199 (“TV 20, or the PC 30 reads its internally-stored

device ID and certificate, and transmits the read device ID and certificate to the communication controlling device 40”), ¶200 (“data- communication controlling device 40 authenticates the received certificate (step S102). When the authentication is unsuccessful (“NO” in step S103), the data-communication controlling device 40 revokes the received device ID and certificate, and the process ends. When the authentication is successful (“YES” in step S103), the data-communication controlling device 40 assigns a network address (step S105)”), FIG. 9. EX1002, ¶232.

Futa discloses *the main terminal* (broadcast receiving device 10, data-communication controlling device 40)...*transmits the content* (content) *stored in the storage* (content storing unit 103) *to the subsidiary terminal* (TV 20, PC 40) *which can be connected, based on the association information* (judgment tables). EX1009, ¶¶205-206, ¶212. EX1002, ¶233.

Following authentication, data communication controlling device 40 sends content stored in content storing unit 103 to TV 20 or PC 40 based on the judgement tables. EX1009, ¶205 (“TV 20 or the PC 30 transmits a content request including as content ID, and its internally-stored network address, to the broadcast receiving device 10 via the data-communication controlling device”), ¶206 (“broadcast receiving device 10 reads content identified by the content ID included in the content request, from the content storing unit 103...encrypts the read

content....[and] transmits the encrypted content and the transmission target address, to the data-communication controlling device 40”), ¶212 (“device ID being included in the judgment table means that the content is permitted to be transmitted, whereas the device ID not being included in the judgment table means that the content is not permitted to be transmitted.”). EX1002, ¶234.

E. Claim 2

Futa-McClellan combination renders this claim obvious. EX1002, ¶¶235-236; see also §VI(B) (claim 1). Futa discloses *wherein the main terminal* (broadcast receiving device 10, data-communication controlling device 40) *includes a converter down-converting the content (content) and transmits the down converted content to the subsidiary terminal* (TV 20, PC 30). A POSITA would have understood and found obvious that Futa’s broadcast receiving device 10 and data-communication controlling device, collectively, can down-convert content and transmit the down converted content to the subsidiary terminal as evidenced by Shindo and Sasaki. §IV(C), §V(C) (claim 2). EX1002, ¶237.

F. Claim 3

Futa-McClellan combination renders this claim obvious. EX1002, ¶¶238-239; see also §VI(B) (claim 1). Futa discloses *wherein the main terminal* (broadcast receiving device 10, data-communication controlling device 40) *includes a network interface and acquires the content from an external server via*

the network interface. Futa discloses that broadcast receiving device 10 includes a receiving unit 101 for receiving content from broadcast device 60. EX1009, ¶¶54-56. A POSITA would have understood and found obvious that Futa's broadcast receiving device 10 and data-communication controlling device, collectively, can receive content from an external server via a network interface in addition to broadcast content from broadcast device 60 as evidenced by Shindo and Sasaki. §IV(D), §V(D) (claim 3). EX1002, ¶240.

G. Claim 4

Futa renders this claim obvious alone or in combination with McClellan. EX1002, ¶241.

1. [4pre]-[4a]

Futa discloses these limitations. §§VI(B)(1)-(2) (limitations 1pre-1a). EX1002, ¶¶242-243.

2. [4b]

This limitation has been recast from “a plurality of subsidiary terminals” to “first subsidiary terminal.” Nevertheless, Futa discloses this limitation. §VI(B)(3) (limitation 1b). EX1002, ¶244.

3. [4c]

This limitation has been recast from “a plurality of subsidiary terminals” to “second subsidiary terminal.” Nevertheless, Futa discloses this limitation. §VI(B)(3) (limitation 1b). EX1002, ¶245.

4. [4d]

Futa discloses this limitation. §VI(B)(4) (limitation 1c). EX1002, ¶246.

5. [4e]

Futa-McClellan combination discloses this limitation. §VI(B)(5) (limitation 1d). EX1002, ¶247.

6. [4f]

This limitation has been recast from reciting “with the subsidiary terminals” to “with the first subsidiary terminal and the second subsidiary terminal.” Nevertheless, Futa discloses this limitation. §VI(B)(6) (limitation 1e). EX1002, ¶248.

7. [4g]

This limitation has been recast from reciting “a plurality of device specific identification (ID) information of the subsidiary terminals” to “with the first subsidiary terminal and the second subsidiary terminal.” Nevertheless, Futa discloses this limitation. §VI(B)(7) (limitation 1f). EX1002, ¶249.

8. [4h]

This limitation has been recast from reciting “a plurality of content information” to “first content information for identifying first content among the contents and second content information for identifying second content among the contents.” Nevertheless, Futa discloses this limitation. §VI(B)(8) (limitation 1g). EX1002, ¶250.

9. [4i]

This limitation has been recast from reciting “store association information for transmitting one of the contents to one of the subsidiary terminals” to “store association information for transmitting one of the first content or the second content to one of the first subsidiary terminal or the second subsidiary terminal.” Nevertheless, Futa discloses this limitation as “one of the first content or the second content” is the same as “one of the contents” and “one of the first subsidiary terminal or the second subsidiary terminal” is the same as “to one of the subsidiary terminals.” §VI(B)(9) (limitation 1h). EX1002, ¶251.

10. [4j]

This limitation has been recast from reciting “the association information defines that one of the contents identified by the content information is associated with one of the device specific ID information” to “the association information defines that one of the first content or the second content is associated with one of the first device specific ID information or the second device specific ID information.” Nevertheless, Futa discloses this limitation as “one of the first content or the second content” is the same as “one of the contents” and “one of the first device specific ID information or the second device specific ID information” is the same as “one of the subsidiary terminals.” §VI(B)(10) (limitation 1i). EX1002, ¶252.

11. [4k]-[4p]

Futa discloses these limitations. §§VI(B)(11)-(13) (limitations 1j-1l).

EX1002, ¶¶253-258.

VII. MANDATORY NOTICES UNDER 37 C.F.R. §§ 42.8(B)(1)-(4)

1. Real Party-In-Interest

Samsung Electronics Co. Ltd. and Samsung Electronics America, Inc. are the Petitioners and real parties-in-interest.

2. Related Matters

The '650 patent is subject to the following actions: *Maxell, Ltd. v. Samsung Electronics Co., Ltd.*, 5-25-cv-00052 (EDTX 2025).

3. Lead and Backup Counsel

Lead Counsel	Backup Counsel
Gianni Minutoli Reg. No. 41,198 DLA Piper LLP (US) One Fountain Square 11911 Freedom Drive Suite 300 Reston, VA 20190-5602 Phone: + 1 703 773 4000 Fax: + 1 703 773 5000 Gianni.Minutoli@us.dlapiper.com	James M. Heintz Reg. No. 41,828 DLA Piper LLP (US) One Fountain Square 11911 Freedom Drive Suite 300 Reston, VA 20190-5602 Phone: + 1 703 773 4000 Fax: + 1 703 773 5000 Jim.Heintz@us.dlapiper.com Joseph Wolfe Reg. No. 73,173 DLA Piper LLP (US) 1650 Market Street Suite 5000 Philadelphia, PA 19103-7300

	Phone: + 1 215 656 3359 Fax: + 1 215 606 2059 Joseph.Wolfe@us.dlapiper.com
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4. Service Information

Please address correspondence to counsel at the addresses above. Petitioners consent to electronic service to: DLA-Maxell-2-IPRs@us.dlapiper.com and the email addresses listed above.

VIII. CONCLUSION

All Challenged Claims should be found unpatentable.

Dated: July 17, 2025

Respectfully submitted,

/s/ Gianni Minutoli

Gianni Minutoli

Reg. No. 41,198

DLA Piper LLP

One Fountain Square

11911 Freedom Drive, Suite 300

Reston, VA 20190-5602

Phone: + 1 703 773 4000

Fax: + 1 703 773 5000

Gianni.Minutoli@us.dlapiper.com

Attorney for Petitioners.

CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. § 42.24(d), Petitioners certify that this petition includes 13,756 words, as measured by Microsoft Word, exclusive of the table of contents, mandatory notices under § 42.8, certificates of service, word count, claim listing, and exhibits.

Date: July 17, 2025

/s/ Gianni Minutoli

Gianni Minutoli

Reg. No. 41,198

DLA Piper LLP

One Fountain Square

11911 Freedom Drive, Suite 300

Reston, VA 20190-5602

Phone: + 1 703 773 4000

Fax: + 1 703 773 5000

Gianni.Minutoli@us.dlapiper.com

Attorney for Petitioners.

CERTIFICATE OF SERVICE

The undersigned certifies pursuant to 37 C.F.R. §§ 42.6(e) and 42.105 that on July 17, 2025, a true and correct copy of the Petition for *Inter Partes* Review of U.S. Patent No. 11,277,650 was served by emailing a copy of the same (by agreement) to the following attorneys for the Patent Owner:

Robert G. Pluta – rpluta@mayerbrown.com

Saqib Siddiqui – ssiddiqui@mayerbrown.com

A courtesy copy was sent to the below counsel via electronic mail:
maxell-samsung-service@mayerbrown.com

Dated: July 17, 2025

Respectfully Submitted,

/s/ Gianni Minutoli

Gianni Minutoli

Reg. No. 41,198

DLA Piper LLP

One Fountain Square

11911 Freedom Drive, Suite 300

Reston, VA 20190-5602

Phone: + 1 703 773 4000

Fax: + 1 703 773 5000

Gianni.Minutoli@us.dlapiper.com

Attorney for Petitioners