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Date: July 11, 2025

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The documents are designated as:

- WO2005094080A1

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"To the best of my knowledge, the aforementioned documents are a true, full and accurate translation of the specified documents."



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IPR2025-01308; Samsung
Ex. 1004 - Page 1



PCT

(10) International Publication No.
WO 2005/094080 A1

(43) International Publication Date
October 06, 2005 (06.10.2005)

(51) International Patent Publication H04N 7/173 5/44, 5/76

(21) International Application Number: PCT/JP2005/005879

(22) International Filing Date: March 29, 2005 (29.03.2005)

(25) Filing Language: Japanese

(26) Publication Language: Japanese

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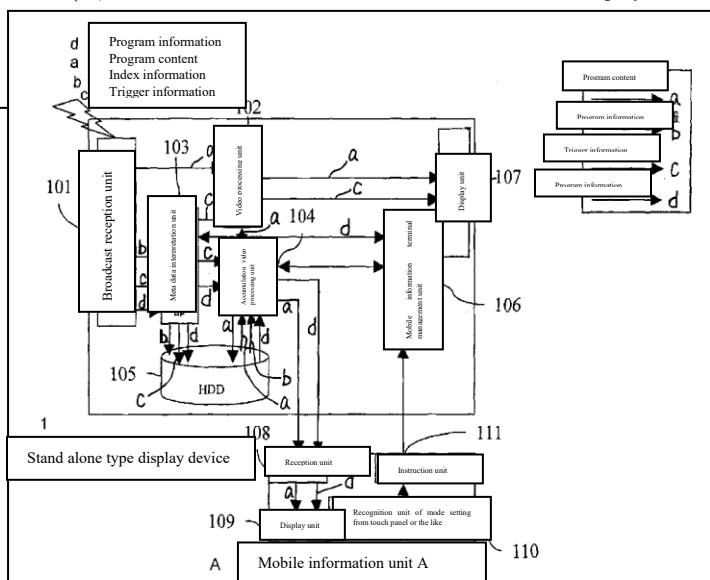
(30) Priority Rights Data

Patent Application 2004-096864 March 29, 2004 (29.03/2004) JP

[there are continued pages]

(54) Title: **ACCUMUNATION DISPLAY DEVICE, INTERLOCKED DISPLAY METHOD AND SYSTEM**

(54) Title of the Invention: **AccumulationAccumulation display device, interlocked display method and system**



d... PROGRAM INFORMATION
a... PROGRAM CONTENT
b... INDEX INFORMATION
c... TRIGGER INFORMATION
101... BROADCAST RECEPTION UNIT
103... META DATA INTERPRETATION UNIT
102... VIDEO PROCESSING UNIT
104... ACCUMULATION VIDEO PROCESSING UNIT
106... MOBILE INFORMATION TERMINAL MANAGEMENT UNIT
107... DISPLAY UNIT
1... STAND ALONE TYPE DISPLAY DEVICE
108... RECEPTION UNIT
111... INSTRUCTION UNIT
109... DISPLAY UNIT
110... RECOGNITION UNIT OF MODE SETTING FROM TOUCH PANEL OR THE LIKE
A... MOBILE INFORMATION TERMINAL

(57) Abstract: It is possible to separately manage a mobile information terminal. When there are a plurality of mobile information terminals, according to specification of each of the mobile information terminals, an accumulation display device can performs interlocked display of a content. For this, the accumulation display device includes: a meta data interpretation unit for analyzing meta data transmitted by a broadcast wave and a communication network; and an accumulation video processing unit for accumulating a program content or transmitting a program content reconfigured. The accumulation display device separately manages a mobile information terminal. There is also provided an interlocked display system formed by the mobile information terminal. Various scenes of the program being viewed in the accumulation display device can be viewed as a highlight or a replay in another device. Furthermore, in the mobile information terminal, it is possible to view not only a past scene but also a program being viewed or a related program.

(57) Abstract: A system that manages portable information terminals individually, and enables a accumulation display device to display content in a linked manner according to the specifications of each portable information terminal when there are a plurality of portable information terminals. To achieve this, the system is equipped with a metadata interpretation unit that analyzes metadata sent by broadcast waves or communication networks, and a accumulation video processing unit that accumulates program content or transmits reconstructed program content, and is composed of a accumulation display device that manages portable information terminals individually, and a portable information terminal. Various scenes of a program being viewed on the accumulation display device can be viewed on another device in the form of highlights

[there are continued pages]



WO 2005/094080 A1



(81) Designated States (for the protection of all kinds of domestic rights unless otherwise indicated): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,

ZW), Eurasia (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), Europe (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Accompanying publications:

- International search report

- Publication before the deadline for amending the claims, which will be republished upon receipt of amendments.

For two-letter codes and other abbreviations, see the Guidance Note on Codes and Abbreviations published at the beginning of each periodical PCT Gazette.

or replays. Furthermore, on the portable information terminal, not only past scenes but also information about the program being viewed and related programs can be viewed.

Specification

Accumulation display device and linked display method and system

Technical field

- [0001] The present invention relates to a accumulation display device that accumulates and displays digital broadcast data transmitted from a broadcasting station, information provided separately from the main broadcast, or information from previous broadcasts or provided separately, and in particular to an accumulation display device and linked display method and system that displays in conjunction with an accumulation display device and a mobile information terminal that is a sub-display used near the user.

Prior art

- [0002] In recent years, digital television broadcasting using BS and CS (broadcast satellites) has been carried out in Japan, and terrestrial digital broadcasting has also been carried out since the end of 2003. Digital broadcasting has made it possible to transmit large amounts of data, making it possible to broadcast a larger number of channels than analog broadcasting, and at the same time, it has become possible to broadcast various information other than video and audio information. This various information includes program listings, attribute information about programs, and data for personal computers. Users can now not only watch video and audio information, but also receive services using such various information. Furthermore, the explosive spread of ADSL and other technologies has led to the penetration of Internet content into every household, and people can now not only use the Internet as an information source, but also enjoy videos. Due to this background, the boundary between broadcasting and the Internet has become even more blurred, and it has become possible to enjoy both broadcasting and the Internet in conjunction with each other by using broadcast attribute information (for example, see Patent Document 1).
- [0003] Furthermore, the spread of data broadcasting and the spread of mobile information terminals has diversified the ways in which broadcasting and the Internet can be enjoyed (for example, see Patent Document 2). Users have come to accept the idea of viewing two related pieces of information at the same time.
- [0004] In addition, the spread of wireless LCD TVs has made it possible to view large-screen content using both stationary TVs and wireless LCD TVs a reality.

Patent Document 1: Japanese Unexamined Patent Publication No. 11-196345

Patent Document 2: Japanese Unexamined Patent Publication No. 2002-247472

Disclosure of the Invention

Problem to be Solved by the Invention

[0005] However, with the above-mentioned conventional technology, it was not possible to view replays or highlights of a program being broadcast in real time on another device.

The present invention aims to display replays and highlights of a program being viewed on an accumulation display device, which is the main display device, and a mobile information terminal, which is the sub-display device, on the mobile information terminal. Furthermore, the highlights and replays are displayed in the image intended by the broadcasting station at the timing intended by the broadcasting station.

Means for Solving the Problem

[0006] To solve the above problem, the accumulation display device of the present invention is equipped with a reception unit that receives program content currently being broadcast and trigger information for special playback of the program content, an accumulation unit that accumulates the program content, a metadata interpretation unit that interprets the trigger information of the program content currently being broadcast or the accumulated program content and outputs mode information for special playback, and an accumulation image processing unit that extracts at least a part of the accumulated program content using the mode information from the trigger information, reconstructs it, and outputs the reconstructed program content.

[0007] Further, the accumulation display device of the present invention is equipped with a reception unit that receives program content being broadcast and trigger information for special playback of the program content, an accumulation means that accumulates each of the program contents, a metadata interpretation unit that interprets the trigger information of the program content being broadcast or the accumulated program content and outputs mode information for special playback, and an accumulation video processing unit that extracts and reconstructs at least a portion of the accumulated program content according to the mode information from the trigger information, and outputs the reconstructed program content. In this accumulation display device, the reception unit further receives index information of the program being broadcast, the accumulation means further accumulates the index information, the metadata interpretation unit further interprets the index information, and the accumulation video processing unit further extracts and reconstructs at least a portion of the program content from the accumulation means together with the index information according to the contents of the trigger information, and sends the program content reconstructed in the accumulation video processing unit to the mobile information terminal for display.

- [0008] The accumulation display device of the present invention also has a mobile information terminal management unit that manages mobile information terminals; the metadata interpretation unit extracts index information and trigger information of the currently viewed program from metadata sent by broadcast waves or a communication network, etc., links the index information to the program content and accumulates it, compares the trigger information with information from the mobile information terminal management unit, and if it is to be used, extracts partial program content written in the trigger information based on the index information and passes it to the accumulation video processing unit. The accumulation video processing unit accumulates the currently viewed program content, receives the trigger information, the index information, and the partial program content sent by the instruction of the metadata interpretation unit, processes and reconstructs the partial content from the contents of the trigger information and the index information, and sends it to the corresponding mobile information terminal.
- [0009] Also, in the present invention, the metadata interpretation unit extracts and processes program information included in the metadata of the program currently being viewed, and sends it to the mobile information terminal registered in the mobile information terminal management unit.
- [0010] Also, in the present invention, the trigger information includes accumulation instruction information for program content related to the program content currently being viewed, and the index information indicated by the trigger information also includes the program content related to the program content currently being viewed.
- [0011] Also, in the present invention, the metadata interpretation unit receives an operation input from the mobile information terminal, and instructs the accumulated video processing unit to reconstruct partial program content, thereby realizing video operation on the mobile information terminal.
- [0012] Also, in the present invention, the accumulation display device accumulates all programs regardless of viewing like a home server, or accumulates those registered in advance from the mobile information terminal, and sends partial program content to the mobile information terminal based on the trigger information.
- Effects of the Invention
- [0013] As described above, according to the present invention, past scenes of a program being viewed on an accumulation display device can be viewed on another device in the form of highlights or replays. Furthermore, on another device, not only past scenes but also information about the currently viewed program and related programs can be viewed passively, which is the format of TV viewing.

[0014] In addition, when one has stepped out, they may view interesting scenes or digests of a program that is not currently being broadcast and is not being viewed in real time on another device at hand.

[0015] The above objects and advantages of the present invention will become more apparent from the following embodiments, which are described with reference to the accompanying drawings.

[0016] Brief Description of the Drawings

[FIG. 1] Block diagram showing the overall configuration of a linked display system according to a first embodiment

of the present invention

[FIG. 2] Device configuration diagram in Embodiment 1

[FIG. 3] Processing flow diagram of a metadata interpretation unit in Embodiment 1

[FIG. 4] Processing flow diagram of an accumulation video processing unit in Embodiment 1

[FIG. 5] Diagram showing an example of items of index information in Embodiment 1

[FIG. 6] Diagram showing an example of a description of index information in Embodiment 1

[FIG. 7] Diagram showing an example of items of trigger information in Embodiment 1

[FIG. 8] Diagram showing an example of a description of trigger information in Embodiment 1

[FIG. 9] Diagram showing an example of a data structure of a mobile information terminal managed by a mobile

information terminal management unit in Embodiment 1

[FIG. 10] Block diagram showing the overall configuration of a linked display system according to a third embodiment of the present invention

[FIG. 11] Diagram showing an example of items of trigger information in Embodiment 3

[FIG. 12] A diagram showing an example of trigger information description in Embodiment 3.

[FIG. 13] A block diagram showing the overall configuration of a linked display system according to the fourth embodiment of the present invention.

[FIG. 14] A diagram showing an example of the data structure of a mobile information terminal managed by the

mobile information terminal management unit in the fourth embodiment.

[FIG. 15] A diagram showing an example of a mode list presentation in a mobile information terminal.

[FIG. 16] A diagram showing an example of a trick play presentation in a mobile information terminal.

[FIG. 17] A diagram showing an example of a menu presentation in a mobile information terminal.

[FIG. 18] A processing flow diagram of the accumulation video processing unit in Embodiment 5 of the present invention.

[FIG. 19] A diagram showing an example of index information items in Embodiment 5.

[FIG. 20] A diagram showing an example of index information description in Embodiment 5.

[FIG. 21] A diagram showing an example of trigger information items in Embodiment 5.

[FIG. 22] A diagram showing an example of trigger information description in Embodiment 5.

[FIG. 23] A diagram showing an example of trigger information items in Embodiment 6.

[FIG. 24] A diagram showing an example of trigger information description in Embodiment 6.

[FIG. 25] A diagram showing an example of program information data.

Explanation of Symbols

1 stand alone type display device

10 index information

11 program ID

12 index ID

13 starttime

14 finishtime

15 trigger information

16 mode information

17 specified index ID

18 totaltime

19 mobile information terminal management information

20 terminal ID

21 owner

22 connection status

23 user

24 performance

25 mode information

26 accumulation instruction flag

27 accumulation program information

28 transmission start time

29 transmission end time

30 operation information name

31 operation time

32 meaning

33 scoring index

34 number of designated scenes

35 corresponding designated scene time

Best Mode for Carrying Out the Invention

[0018] Hereinafter, the embodiments of the present invention will be described with reference to FIGS. 1 to 24. Note that the present invention is not limited to these embodiments, and may be implemented in various forms without departing from the spirit of the invention.

[0019] (First embodiment)

FIG. 1 is a block diagram showing the overall configuration of a linked display system according to a first embodiment of the present invention. As shown in FIG. 2, the overall configuration of this linked display system is 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. The accumulation display device is not limited to this configuration, and may be a stand alone type display device, a home server, an HDD type accumulation device, a DVD type accumulation device, a PVR, a personal computer, a TV with a HDD, etc., and may have a broadcast reception function, an accumulation function, and a display function integrated or combined separately. The sub-display device may be a mobile information terminal, a mobile phone, a PDA, a personal computer, a dedicated terminal, etc. In this embodiment, a stand alone type display device equipped with an HDD is used as the accumulation display device, which is the main display device, and a mobile information terminal is used as the sub-display device.

[0020] The configuration of a stand alone type display device 1 is described in FIG. 1. This stationary display device 1 is composed of a broadcast reception unit 101 that receives metadata such as program content, index information, or trigger information from broadcast waves or a network, a video processing unit 102 that performs signal processing of the program content received by the broadcast reception unit 101 and transmits it to the display means side and the accumulation means side, a metadata interpretation unit 103 that analyzes the contents of the metadata received by the broadcast reception unit 101, an accumulation video processing unit 104 that performs accumulation processing of the program content or transmission processing of the reconstructed program content, a hard disk (HDD) 105 that is an accumulation

means for accumulating the program content or index information, a mobile information terminal management unit 106 that manages information on the mobile information terminal to which the reconstructed program content should be sent, and a display unit 107 that receives input of the program content from the video processing unit 102 and displays it. In FIG. 1, among the alphabetic symbols a, b, and c attached to some of the signal lines, a (7 places) indicates the signal line through which program content is transmitted, b (2 places) indicates the signal line through which index information is transmitted, and c (3 places) indicates the signal line through which trigger information is transmitted.

- [0021] The 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.
- [0022] Furthermore, the trigger information can specify the timing of transfer or distribution of a program to a mobile information terminal or the like, and can also specify a scene of the program to be distributed. The index information can also be specified to specify a scene of the program.
- [0023] The broadcast reception unit 101 receives program content, index information, and trigger information from broadcast waves or a network. The broadcast waves and network here are assumed to refer to broadcast waves such as digital broadcasting and satellite broadcasting, and networks such as ADSL and FTTH, but are not limited to these.
- [0024] The video processing unit 102 outputs the program content received by the broadcast reception unit 101 to the display unit 107 for display, and also outputs the program content being viewed to the accumulation video processing unit 104. In addition, all or any program contents may be accumulated in HDD 105, without being limited to the program contents being viewed. In addition, not only the program contents being broadcast, but also the program contents accumulated in HDD 105 may be applied when viewing.
- [0025] Furthermore, an accumulation instruction or a viewing instruction on the mobile information terminal may be received in advance from the user, and the program contents may be accumulated regardless of whether or not the program contents are being viewed on the stand alone type display device 1.

- [0026] The metadata interpretation unit 103 receives input of metadata such as the index information and the trigger information received by the broadcast reception unit 101. If the input is the index information, the metadata interpretation unit 103 accumulates the index information in association with the program content accumulated in the HDD 105 based on its contents. The accumulation location of the index information can be accumulated by the metadata interpretation unit 103. FIG. 5 shows an example of a data list of index information. As is clear from FIG. 5, the index information 10 includes, as data indicating its contents, a program ID 11 for identifying the program (or content) corresponding to the index information 10, an index ID 12 for identifying the index information 10, and various data such as a "starttime" 13 and a "finishtime" 14. The "starttime" 13 constitutes data indicating the start time of the program. The "finishtime" 14 constitutes data indicating the end time of the program. The "finishtime" 14 may be a duration.
- [0027] FIG. 6 is a diagram showing an example of the description of index information 10. In the example of FIG. 6, index information 10 has "200301011700FU JI" described as "ContentID" 11, which is a program ID, and "001" described as index ID 12. As for the specific contents of index information 10 such as "starttime" 13 and "finishtime" 14, "starttime" 13 has 200301011903 described, which represents 19:03 on January 1, 2003. Also, "finishtime" 14 has 200301011907 described, which represents 19:07 on January 1, 2003.
- [0028] Also, 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 mode information as the trigger information. If there is a mobile information terminal, the metadata interpretation unit 103 searches the HDD 105 for the 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.
- [0029] FIG. 7 is a diagram showing an example of a data list of trigger information. As shown in FIG. 7, the trigger information 15 includes a program ID 11 for identifying the program (or content) corresponding to the trigger information 15, mode information 16 for identifying the trigger information 15, a specified index ID 17 for identifying the specified index information 10 (which is essentially the same as the index ID 12), and a "total time" 18 of the trigger information 15.

Also, the trigger information 15 may be configured to include only the mode information 16 and the specified index ID 17, excluding "total time."

- [0030] FIG. 8 is a diagram showing an example of the description of the trigger information 15. In the example of FIG. 8, the trigger information 15 describes the display of "200301011700FUJI" as the program ID 11, and describes "replay" as the mode information 16. In addition, the specified index ID 17 describes "3" as the total number of specified index information, and the IDs of the three specified index information are No.1 ID="001," No.2 ID="011," and No.3 ID="035," and the specific content of "00:05:00" is described as "total time" 18.
- [0031] Here, the processing operation in the metadata interpretation unit 103 will be explained using the processing flow shown in FIG. 3.
- [0032] First, the metadata interpretation unit 103 accepts input from the broadcast reception unit 101, and if the received information includes index information 10, extracts index information 10 (S301). Next, the metadata interpretation unit 103 associates the received information with the corresponding program content indicated by index information 10 and accumulates the information in the HDD 105 (S302), and ends the input acceptance operation.
- [0033] Also, if the received information includes trigger information 15, the trigger information 15 is extracted (S303). Then, 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. If the corresponding mobile information terminal does not exist, the processing ends (S304). If the corresponding mobile information terminal exists, index information 10 is detected based on specified index ID 17 in trigger information 15 (S305). Then, based on the detected index information 10, program content is extracted from HDD 105 together with the detected index information 10 (S306). Next, the program content and index information are sent directly from HDD 105 to accumulation video processing unit 104, and trigger information 15 is sent to accumulation video processing unit 104 (S307), completing the series of processing operations.
- [0034] 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. In addition, 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 (FIGS. 7 and 8) and sends the reconstructed program content to the mobile information terminal.

- [0035] Here, the processing operation in the accumulation video processing unit 104 will be explained using the processing flow shown in FIG. 4.
- [0036] First, the accumulation video processing unit 104 analyzes the received input, and if the input signal is input from the video processing unit 102, it accepts the input of the program content (S401). Next, it accumulates the program content in the HDD 105 (S402), and ends the input acceptance operation.
- [0037] If the input signal is input from the metadata interpretation unit 103, it accepts the input of the index information 10 and the trigger information 15 (S403). Next, it associates the program content with the index information 10 and temporarily accumulates it (S404). Then, it rearranges the program content using the index information 10 in the order of the indexes in the trigger information 15 (S405). Next, the 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, and the information of the mobile information terminal is acquired (S406). After that, 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. Then, the reconstructed program content is transmitted to the mobile information terminal (S408), and the series of accumulation video processing operations is terminated.
- [0038] Furthermore, the accumulation video processing unit 104 accumulates the program content for each program, and the metadata interpretation unit 103 instructs the program content to be searched based on the index information 10 and accumulates the program content in the HDD 105 in a linked form. Additionally, the accumulation video processing unit 104 retrieves the index information 10 based on the trigger information 15, and retrieves and outputs the program content linked to the index information 10.
- [0039] The accumulation means (HDD 105) for program contents and the like is not limited to a HDD, but may be any other accumulation medium (e.g., optical disk, DVD, etc.) having a accumulation area, and does not need to be present in the stand alone type display device 1 (it may be attached to the outside of the stationary type display device 1).
- [0040] The 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. The mobile information terminal management unit 106 responds to a mobile information terminal information inquiry request from the metadata interpretation unit 103 and an inquiry request for the capabilities and connection information of the mobile information terminal A from the accumulation video processing unit 104. FIG. 9 is a diagram showing an example of management information of the mobile information terminal A.

As shown in FIG. 9, the management information 19 of the mobile information terminal 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.

[0041] The display unit 107 receives and displays program content from the video processing unit 102. Note that the display unit 107 does not need to be integrated with the stand-alone type display device 1, and is assumed to be a display device at the center of a family where multiple people watch, but is not limited to this.

[0042] Next, the mobile information terminal A will be described with reference to FIG. 1. The 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 and sends it to the display unit 109, the display unit 109 that receives the reconstructed program content from the reception unit 108 and displays it, a recognition unit 110 that recognizes input from an input means such as a touch panel and sends it to the instruction unit 111, and an instruction unit 111 that sends input information, connection information, and terminal information (FIG. 9) from the recognition unit 110 to the mobile information terminal management unit 106.

[0043] The operation of the linked display system configured as above will be explained using a professional baseball broadcast as an example. As an example of the configuration of the linked display system, a situation is assumed in which two mobile information terminals A and B are present on a stand alone type display device 1 as shown in FIG. 2.

[0044] It is assumed that multiple viewers are watching a program being broadcast in real time on the stand alone type display device 1, and two of the viewers each have a mobile information terminal. Also, it is assumed that a viewer holding mobile information terminal A has been watching the live broadcast of a professional baseball game since the program began, and a viewer holding mobile information terminal B has been watching the live broadcast of a professional baseball game since the program began.

[0045] First, 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.

After that, the replay mode is selected by the recognition unit 110 of the mobile information terminal A, and the mode information is sent as "replay" from the instruction unit 111, which is accumulated in the mobile information terminal management unit 106.

[0046] Then, a professional baseball broadcast is watched on the stand alone type display device 1. At that time, the video processing unit 102 sends a signal to the accumulation video processing unit 104 to accumulate the professional baseball broadcast being watched. The accumulation video processing unit 104 then secures an accumulation location for the professional baseball broadcast in the HDD 105 and starts saving it in the HDD 105. In addition, index information 10 sent together with the program content of the professional baseball broadcast is sent to the metadata interpretation unit 103 and is accumulated in the HDD 105 in association with the program content of the professional baseball broadcast.

[0047] Next, when the batting order has gone through one round or more, trigger information 15 is sent together with the program content and index information 10 to the broadcast reception unit 101 in accordance with the current program content. The transmitted trigger information 15 is interpreted by the metadata interpretation unit 103, and after confirming that the trigger information 15 is for the program currently being viewed, the unit reads that the mode information is "replay" mode. Thereafter, the metadata interpretation unit 103 inquires of the mobile information terminal management unit 106 whether there is a mobile information terminal that has selected the same mode, and finds that mobile information terminal A is the one in question.

[0048] Then, the metadata interpretation unit 103 searches the HDD 105 from the index ID designation information in the contents of the metadata (index information, trigger information) (FIGS. 6 and 8), extracts the index information 10, extracts a portion of the professional baseball broadcast linked to the index information 10, and sends it to the accumulation video processing unit 104, including the trigger information 15 and the fact that it is mobile information terminal A.

[0049] The accumulation video processing unit 104 receives input from the metadata interpretation unit 103 and first rearranges the program contents (part of a professional baseball broadcast) in the order of the specified index IDs in the trigger information 15. For example, in the example of trigger information 15 in FIG. 8, the specified index IDs are rearranged in the order of No. 1 ID="001," No. 2 ID="011," No. 3 ID="035." Then, the accumulation video processing unit 104 inquires of the mobile information terminal management unit 106 about the information of the mobile information terminal A, and processes the stream according to the mobile information terminal. For example, in the case of the mobile terminal management information shown in FIG. 9, the stream is processed according to display size=2.5, resolution=345×456, and encode=mpeg4.

Then, the accumulation video processing unit 104 sends the stream to the mobile information terminal A according to the terminal information. Mobile information terminal A receives the sent stream at the reception unit 108 and displays it on the display unit 109. Therefore, when batter C is about to step up to bat on the stand alone type display device 1, the user can view the processed video of batter C's previous turn at bat on the mobile information terminal without any special operation.

[0050] Also it is assumed that a user who owns mobile information terminal B wants to join in the middle of a program. Then, as in the case of mobile information terminal A, a connection request from the instruction unit 111 of mobile information terminal B is sent to the mobile information terminal management unit 106 of the stand alone type display device 1, a connection is established, and the terminal information is sent. However, since the user of mobile information terminal B will start watching in the middle, he or she first wants to see the highlights so far, so sets the mode information to "highlight" mode and sets it in the mobile information management unit 106. When the trigger information 15 in the "highlight" mode is periodically sent to the broadcast reception unit 101 of the stand alone type display device 1, the metadata interpretation unit 103 inquires of the mobile information terminal management unit 106 and finds out that the relevant mobile information terminal (mobile information terminal B) exists. Since the relevant mobile information terminal exists, the metadata interpretation unit 103 operates in the same way as in the "replay" mode, extracts the program content, and sends it to the accumulation video processing unit 104. The accumulation video processing unit 104 also basically operates in the same way as in the "replay" mode.

[0051] As described above, the reception of the trigger information is used as the distribution timing to extract, reconstruct, and distribute the designated partial program content included in the trigger information to the mobile information terminal, so that the user can use the real-time broadcast on the sub-display device and view information linked to the current real-time broadcast.

[0052] In addition, even if the user joins in the middle of the game, the user can immediately enjoy the highlights so far and catch up with the current game situation. Moreover, because the highlights are viewed on a mobile information terminal, other users are not inconvenienced. In addition, since the mode can be changed during the broadcast, the user of mobile information terminal B can change to replay mode after viewing the highlights and continue enjoying the live baseball broadcast.

[0053] In addition, the display unit 107 of the stand-alone type display device or the display unit 109 of the mobile information terminal may display the arrival of trigger information and its contents on the screen, which may be presented to the user, and the mode of the mobile information terminal may be changed using this as a trigger.

[0054] (Embodiment 2)

The overall configuration of the linked display system according to Embodiment 2 of the present invention is the same as that shown in FIG. 1 of Embodiment 1. However, in Embodiment 2 of the present invention, the input to the broadcast reception unit 101 receives program information (signal line d) including program content data in addition to program content, index information, and trigger information.

[0055] Then, the operation of the linked display system will be described with a focus on program information. The program information is sent from the broadcast transmitting/reception unit 101 to the metadata interpretation unit 103. The metadata interpretation unit 103 inquires the mobile information terminal management unit 106 as to whether there is a mobile information terminal connected, and if there is a mobile information terminal connected, interprets the program information and processes it for display. Then, the processed program information is sent to the accumulation video processing unit 104. The accumulation video processing unit 104 inquires the mobile information terminal management unit 106, obtains information on the connected mobile information terminal, and processes it according to the mobile information terminal. Then, it is confirmed that the program content according to the trigger information is not currently being sent to the mobile information terminal, and the processed program information is sent to the mobile information terminal. If the program content is being sent to the mobile information terminal, the program content and the program information are further processed and sent so that they are displayed on a part of the screen.

[0056] The program information 36 is a description of detailed information and location of the program data as shown in FIG. 25, and is composed of a program ID 11 that identifies the program content, a service ID (channel) 37 that identifies the service provider or broadcasting station, a start time 38, a duration 39 that indicates the length of time, a title 40 of the program content, a keyword 41 that indicates the contents of the program content, performers 42, a genre 43 of the program content, the number of episodes in the series 44, viewing restrictions 45 such as prohibition for those under 18 years of age, a linked viewing service 46 that indicates whether the program is compatible with the linked viewing service by the main display device and the sub display device disclosed in the present invention, and mode list information 16 that lists the mode information that the program supports. Also, it refers to SI information currently used in digital broadcasting, Program Information defined in server-based broadcasting, etc., but is not limited thereto.

[0057] Further, by adding mode list information 16 to the program information and sending it together with the program information when a connection is established with the mobile information terminal, it is possible to inform the user of available mode information and allow him/her to select it.

This allows the user to select mode information appropriate for a program and view partial program content appropriate for the program extracted based on the trigger information of the corresponding mode information. In other words, different mode information exists for each program, and the user can select for each program and view partial program content on the mobile information terminal by receiving trigger information with the corresponding mode information. FIG. 15 shows an example of mode list information presented on a mobile information terminal. As is clear from FIG. 15, the operation modes include linked playback, replay playback, highlight playback, chase playback, personal CM playback, previous highlight, and other modes, but these can be freely set according to the program to be viewed and are not limited in any way.

[0058] Furthermore, mode information to be added to program information can be distributed in advance in the same manner as an EPG (Electronic Program Guide) and accumulated in a stand-alone type display device, and can be distributed to the mobile information terminal as one of the program guides when a connection is established with the mobile information terminal before the program starts, and can be reserved. Of course, it is also possible to reserve a program before it starts on a stand-alone type display device as part of a program guide.

[0059] As described above, the user can enjoy program information in addition to the selected mode image. In addition, since the program producer can set mode information for each program, the mode image that matches the distributed program can be provided, and the user can watch the program in a way that is more suited to the program.

[0060] (Embodiment 3) FIG. 10 is a block diagram showing the overall configuration of a linked display system according to a third embodiment of the present invention. The configuration of this linked display system is basically the same as that of Embodiment 1, but as shown in FIG. 10, a processing command is sent from the metadata interpretation unit 1003 to the video processing unit 1002 (signal line e).

[0061] Furthermore, Embodiment 3 of the present invention adds accumulation instruction information, accumulated program information, transmission time, etc. to the trigger information. Furthermore, in addition to the program content to be viewed, related content that is related to the program content being viewed is input and explicitly accumulated.

[0062] Here, the operation will be explained focusing on trigger information and related content. As an example, assume that a TV drama series is being watched. As in the above-mentioned embodiments 1 and 2, it is assumed that the drama is being watched on a stand alone type display device 1.

Trigger information is sent at the same time as viewing of the drama starts, and the metadata interpretation unit 1003 checks that the accumulation instruction flag is set and the transmission start time of the accumulated program information, and sends it to the video processing unit 1002.

[0063] FIG. 11 is a diagram showing an example of a data list of trigger information used in Embodiment 3, and FIG. 12 is a diagram showing an example of a description of trigger information used in Embodiment 3. The contents of these FIGS. 11 and 12 are basically the same as the contents of the trigger information described above in relation to FIGS. 7 and 8, but the data structure of FIGS. 11 and 12 contains more information. That is, as is clear from FIG. 11, trigger information includes program ID 11 for identifying the program (or content) corresponding to the trigger information, mode information 16 for identifying the trigger information, specified index ID 17 for identifying the specified index information, accumulation instruction flag 26 for instructing accumulation of program content, accumulated program information 27 showing information about the program to be accumulated, and data indicating transmission start time 28 at which transmission of the program starts and transmission end time 29 at which transmission of the program ends.

[0064] In the example of FIG. 12, which shows an example of description of trigger information, trigger information 15 describes the display of "200301011700FUJI" as program ID 11, and describes "accumulation" as mode information 16. Furthermore, as specified index ID 17, No. 1 ID="999" is described as the ID of the specified index information. Also, "00:05:00" is described as "total time." Furthermore, with regard to the accumulated information, "ON" is described as the accumulation instruction flag 26, and the accumulated program information 27 has the accumulated information ID "ex001" and its contents "highlights of episode 10." Furthermore, "2003010117 00" is described as the transmission start time 28, and "2003010117 08" is described as the transmission end time 29.

[0065] The trigger information for accumulation instruction is repeatedly sent until the transmission start time. The video processing unit 1002 accumulates the accumulated program ID and transmission time as a accumulation reservation based on the received trigger information. When the transmission start time comes, the video processing unit 1002 recognizes the related content and sends it to the accumulated video processing unit 1004. The accumulated video processing unit 1004 accumulates the input related content in the HDD 1005. In this example, the related content is highlights from the previous episode, which are played while the opening theme is playing. Therefore, separate trigger information is sent at the same time as it is displayed on the stand alone type display device 1.

The received trigger information reads the related content just accumulated from the HDD 1005 and enters the accumulated video processing unit 1004, which processes the related content for the mobile information terminal connected to the mobile information terminal management unit 1006 before sending it. Also, here, as in the second embodiment, mode information called "related content" may be added to the mode information to select a mode, and both accumulation and transmission may be compared with the mode information as in the previous embodiment. In other words, accumulation and transmission may be performed after confirmation from the user.

[0066] As described above, the user can watch the previous highlight during the same opening theme every time. Also, it becomes possible to watch other related content during commercials in a similar manner.

[0067] (Fourth embodiment) FIG. 13 is a block diagram showing the overall configuration of a linked display system according to a fourth embodiment of the present invention. The configuration of this linked display system is basically the same as that of the first to third embodiments, except that, as shown in FIG. 13, metadata is sent (signal line) from the mobile information terminal management unit 1306 of the stand alone type display device 1 to the reception unit 1308 of the mobile information terminal. Furthermore, a video operation menu is realized on the mobile information terminal by transmitting metadata from the mobile information terminal. A specific operation will be described.

[0068] First, as in the second embodiment of the present invention, the mobile information management unit 1306 acquires information on the mobile information terminal (management information) when a connection request is made from the mobile information terminal. FIG. 14 is a diagram showing a list of management information of the mobile information terminal. As is clear from FIG. 14, the management information 19 of the mobile information terminal includes various information such as the mobile information terminal's terminal ID 20, the owner's name 21, information on whether the connection status is ON or OFF 22, the user's name 23, the mobile information terminal's performance (or function) 24, mode information 25, and operation information 30, 31. When the mobile information (management information) is acquired, the mobile information terminal management unit 1306 sends metadata for a video operation menu tailored to the mobile information terminal to the mobile information terminal, and sets it to the default display. Specifically, for touch panel devices, a GUI environment like a media player is provided at the bottom of the display, and for cross key devices, a selection menu is displayed at the bottom of the display.

In addition, the metadata is embedded so that when the display is selected, a command with an argument is transmitted to the mobile information terminal. The commands to be prepared are assumed to be play, stop, pause, fast forward, rewind, etc., but are not limited to these.

[0069] As described above, FIG. 15 is a diagram showing an example of a mode list presentation on a mobile information terminal, and displays mode information that can be operated such as linked playback and replay playback. FIG. 16 is a diagram showing an example of a trick play presentation on a mobile information terminal, and shows a selection menu of play 50, stop 51, fast forward 53, and rewind 52. FIG. 17 is a diagram showing an example of a menu presentation on a mobile information terminal. As an example, assume that stop 50 is selected when video is being played on the mobile information terminal in highlight mode. When STOP 50 is selected, the recognition unit 1310 of the mobile information terminal interprets the metadata, and the device ID 20 and other information are added via the instruction unit 1311, and the STOP command and the device ID and other information are sent to the mobile information terminal management unit 1306 of the stand alone type display device 1. The mobile information terminal management unit 1306 recognizes the command and the device ID 20, and instructs the accumulation video processing unit 1304 to stop transmission. The accumulation video processing unit 1304 stops transmission, and because it is a STOP command, deletes the stream that was scheduled to be sent.

[0070] As another example, a case where REW 52 is selected while video is being played on the mobile information terminal in replay mode will be described. When rewind 52 is selected, the recognition unit 1310 of the mobile information terminal interprets the metadata, and the device ID 20 and the like are added via the instruction unit 1311. The REW command, rewind time, device ID 20, and the like are sent to the mobile information terminal management unit 1306 of the stand alone type display device 1. The mobile information terminal management unit 1306 recognizes the command and the device ID 20, and instructs the accumulation video processing unit 1304 to stop transmission and reconstruct the video content. The accumulation video processing unit 1304 extracts the video content again from the command and the rewind time, etc., reconstructs it, and transmits it. For this reason, the trigger information and index information are accumulated until the end of the distribution. This makes it possible to handle further video menus. As described above, the user can use the video menu regardless of the distribution method, such as streaming.

[0071] (Embodiment 5) The overall configuration of the linked display system according to embodiment 5 of the present invention is the same as that of Embodiment 1.

However, in Embodiment 5 of the present invention, the contents of the index information and trigger information input to the broadcast reception unit 101 are further increased compared to those in Embodiment 1.

- [0072] In this embodiment, the operation of the linked display system will be described, focusing on the generation of program contents to be displayed on a portable information terminal. The index information incorporates the meaning information 32 (FIGS. 19 and 20) in addition to the data contents of Embodiment 1 (FIGS. 5 and 6). The "meaning information" describes the contents of the contents designated by the index at the keyword level. This meaning information 32 may be hierarchical. In addition, the trigger information includes the meaning information 32 and the scoring index information 33 (FIGS. 21 and 22) in addition to the data contents of Embodiment 1 (FIGS. 7 and 8). The index information input to the broadcast reception unit 101 is accumulated in the HDD 105 in association with the program contents by the metadata interpretation unit 103, as in Embodiment 1. The metadata interpretation unit 103 judges the trigger information input to the broadcast reception unit 101 using information from the mobile information terminal management unit 106 in the same manner as in Embodiment 1, extracts the program content, and sends the program content, index information, and trigger information to the accumulation video processing unit 104.
- [0073] The accumulation video processing operation in the accumulation video processing unit 104 will be described with reference to the flow diagram in FIG. 18.
- [0074] First, the received input is analyzed, and if the input signal is input from the video processing unit 102, the input of the program content is accepted (S1801). Next, the program content is accumulated in the HDD 105 (S1802), and the input acceptance process is terminated.
- [0075] If the input signal is input from the metadata interpretation unit 103, the input of the index information and trigger information is accepted (S1803). Next, the program contents are linked (associated) with the index information and temporarily accumulated (S1804).
- [0076] Then, the program contents are rearranged using the specified index ID 17 in the trigger information 15 (S1805). Next, the time of all program contents is calculated using the start time 13 and finish time 14 of the extracted index information 10, and compared with the total time 18 of the trigger information 15 (S1806). Thereafter, if the total time from the index information is longer than the total time 18 of the trigger information 15, proceed to step S1807, and if it is shorter, proceed to step S1809.
- [0077] If proceeding to step S1807, the meaning information 32 in the index information 10 is scored using the scoring index 33 of the trigger information 15 (S1807).

The index 33 for scoring the trigger information 15 is an index of the weight of the meaning information according to the importance of the program content, and the meaning information 32 is scored so that the more important it is, the higher the value is. Then, the program content with the lowest index score is deleted (S1808). Then, each time a program content is deleted, the time of all remaining program contents is calculated and compared with the totaltime18 of the trigger information 15. Steps S1806 to S1808 are repeated until the totaltime18 of the trigger information 15 is longer. If the totaltime18 of the trigger information 15 is longer, the process proceeds to step S1809.

[0078] When the process proceeds to step S1809, a request is made to the mobile information terminal management unit 106 to obtain the status of the mobile information terminal to be transmitted, and the information of the mobile information terminal is obtained (S1809). Then, the program content is reconstructed according to the mobile information terminal (S1810). Specifically, it is assumed that the format is converted and the file size is changed, that is, the bit rate is changed.

[0079] Then, the reconstructed program content is transmitted to the corresponding mobile information terminal (S1811), and a series of accumulated video processing operations is completed.

[0080] Also, superimpose information may be generated using any of the meaning information 32 of the trigger information 15, the mode information 16, and the meaning information 32 of the index information 10, and displayed on the program content to be sent to the mobile information terminal. Here, superimpose information is one of the special effects of video editing, and refers to information for displaying characters or another cut-out image (generated by the above-mentioned meaning information, etc.) on the screen displaying the content, etc. As a display method, it is assumed that the mode information and the meaning information of the trigger information are presented as text information in the upper left corner of the screen and are always presented while the program content is being played, and the meaning information of the index information is displayed alongside the mode information etc. according to the displayed index information, but this is not particularly limited.

[0081] (Sixth embodiment) The overall configuration of the linked display system according to Embodiment 6 of the present invention is the same as that of Embodiment 1. However, as an example, as shown in FIG. 2, a method is described in which a stand-alone type display device 1 is used as a home server and a mobile information terminal is used outside the home.

- [0082] The stand alone type display device 1 accumulates all broadcast programs, or accumulates in advance the mode information attached to the program information as in the second embodiment, and reserves the programs to be viewed from the mobile information terminal. In other words, the program to be viewed by the user on the mobile information terminal is reserved to be accumulated in the stationary display device 1. Therefore, the stand alone type display device 1 accumulates the program content, index information, trigger information, and program information from the start of the program. Then, before or during the broadcast of the program, the mobile information terminal establishes a connection to the stationary type display device 1, receives the program information with the mode information attached, and registers the mode information in the stand alone type display device 1. Therefore, by registering the mode information, the user can view key scenes such as highlight scenes and replay scenes corresponding to each mode information, such as notable scenes of the program, on the mobile information terminal while away from home.
- [0083] Furthermore, compared to the trigger information in FIGS. 7 and 8, the number of designated scenes 34 and the corresponding designated scene time 35 can be described as in FIGS. 23 and 24. The corresponding designated scene time 35 specifies the start time and duration of the corresponding partial program content. The start time is the time from the start of the program.
- [0084] As a result, in Embodiment 1, when specifying the partial program content to be extracted with the trigger information 15, the specified index ID 17 was specified, and the corresponding index information 10 specified the part of the program content, so the index information 10 was required. However, by specifying the number of designated scenes and the corresponding designated scene time in the trigger information 15 instead of the specified index ID 17, the corresponding partial program content can be extracted with the trigger information 15 even without the index information 10. In other words, when real-time broadcasting is received, the program contents are accumulated as is, and when trigger information is received, the program contents are directly extracted based on the trigger information and sent to the mobile information terminal.
- [0085] The present invention has been described based on the preferred embodiment shown in the drawings, but it is clear that a person skilled in the art can easily modify and alter this invention, and such modifications are also included in the scope of the invention.
- Industrial Applicability
- [0086] The linked display system of the present invention is useful in broadcast program services in which index information and trigger information are added to broadcast programs and users have their own displays for personal use.

As a display for personal use, a personal digital assistant, a mobile phone, a PDA, etc. can be used, and the image can be sent to a remote location via communication.

Claims

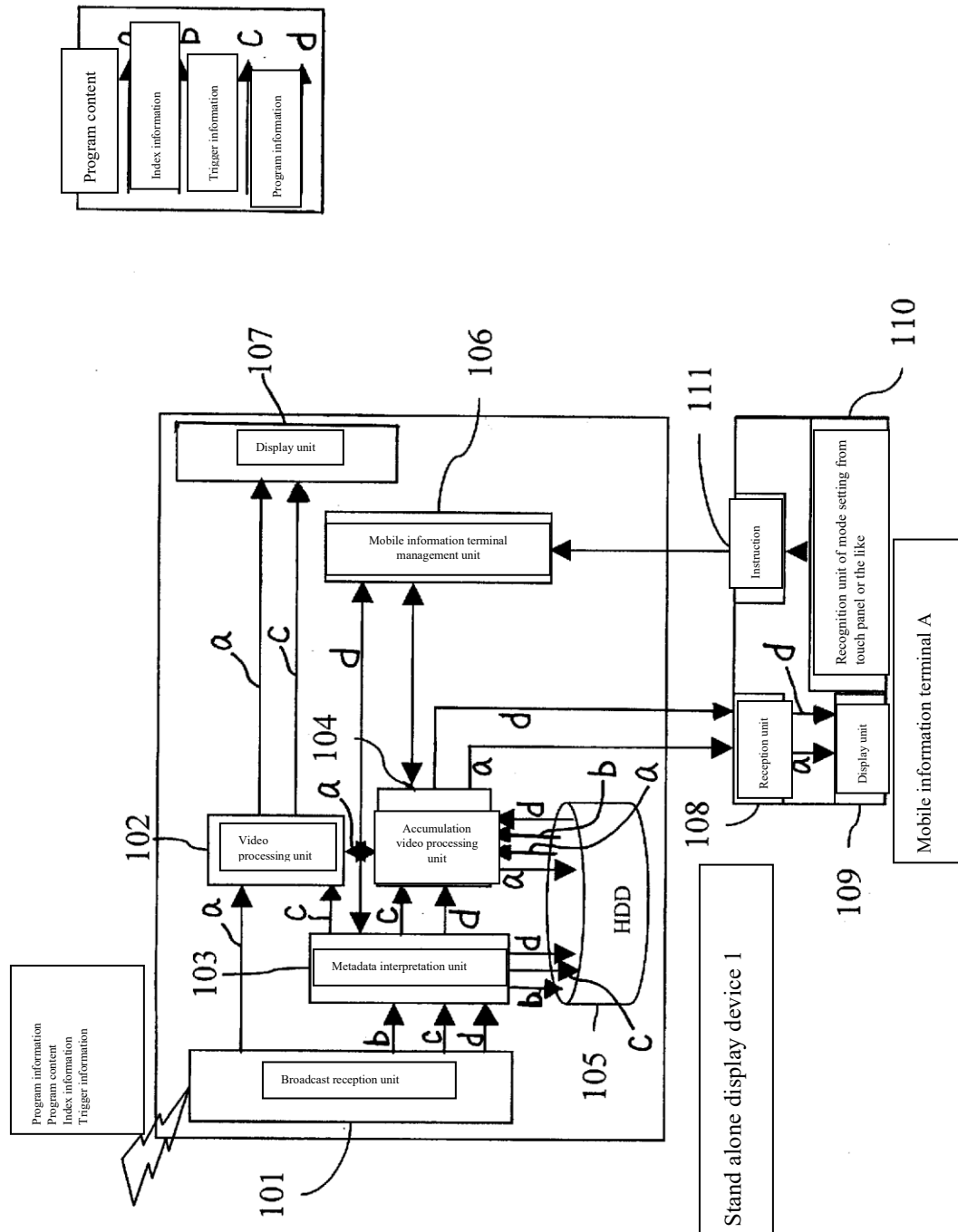
- [1] An accumulation display device, equipped with:
a reception unit for receiving program content currently being broadcast and trigger information for special playback of the program content,
an accumulation unit for accumulating each of the program contents and the trigger information,
a metadata interpretation unit for interpreting the trigger information of the currently being broadcast or the accumulated program content and outputting mode information for special playback, and
an accumulation video processing unit for extracting at least a part of the accumulated program content based on mode information from the trigger information, reconstructing the program content extracted based on the mode information, and outputting the reconstructed program content.
- [2] The accumulation display device according to claim 1, wherein the trigger information includes mode information for performing at least one of the following special playback modes: linked playback, replay playback, highlight playback, and chase playback of the program content being viewed.
- [3] The accumulation display device according to claim 2, further comprising a display unit for displaying the on-air
or accumulated program content and the special playback mode information.
- [4] The accumulation display device according to claim 1, wherein the accumulation video processing unit, in response to a request for special playback mode information from a sub-display device receiving the reconstructed program content, extracts at least a part of the accumulated program content based on trigger information received after the request or the latest trigger information of the request, and outputs the reconstructed program content.
- [5] The accumulation display device according to claim 1, further having a sub-display device management unit for managing terminal information including the terminal ID and performance of at least one sub-display device that receives the reconstructed program content, wherein the accumulation video processing unit processes and outputs the program content according to the performance of each sub-display device.
- [6] A portable information terminal, equipped with:
an input unit for receiving input from a user,
a transmission unit for transmitting user selection information received by the input unit to the accumulation display device described in claim 1,
a reception unit for receiving PUSH distribution of program content reconstructed based on the user selection information from the accumulation display device, and
a display unit for displaying the received reconstructed program content.

- [7] The accumulation display device according to claim 1, wherein:
the reception unit further receives index information associating the program content being broadcast with an index,
the accumulation means further accumulates the index information,
the metadata interpretation unit further interprets the index information, and
the accumulation video processing unit further extracts at least a part of the program content from the index information according to the content of the trigger information, reconstructs the extracted program content based on the mode information, and outputs the reconstructed program content.
- [8] The accumulation display device according to claim 7, wherein the index information includes a program ID for identifying the program corresponding to the index information, an ID for identifying the index information, start time data of the program, and end time data of the program.
- [9] The accumulation display device according to claim 8, wherein the index information further includes meaning information that describes the contents of the program content specified by the index at a keyword level.
- [10] The accumulation display device according to claim 7, wherein the trigger information includes a program ID for identifying the program corresponding to the trigger information, mode information for identifying the trigger information, and one or more start times and extraction times for specifying a scene to be extracted, and specifies the timing for sending at least a part of the program content to the mobile information terminal is specified.
- [11] The accumulation display device according to claim 7, wherein the trigger information includes a program ID for identifying the program corresponding to the trigger information, mode information for identifying the trigger information, and a specified index ID for identifying the specified index information, and specifies the timing for sending at least a part of the program content to the mobile information terminal.
- [12] The linked display device according to claim 12, wherein the trigger information further includes meaning information describing the contents of the program content associated with the index information at a keyword level, and index information for weighting the meaning information according to the importance of the program content.

- [13] The accumulation display device according to claim 7, wherein the accumulation video processing unit adds superimpose information to the reconstructed program content, which is displayed as an image separate from the program content, and changes the duration of each partial program content when reconstructing the partial program content based on the trigger information and the meaning information included in the index information.
- [14] The accumulation display device according to claim 13, wherein the superimpose information is generated using any of the meaning information of the trigger information, the trigger name, and the meaning information of the index information.
- [15] The linked display device according to claim 12, wherein the trigger information includes accumulation instruction information for instructing accumulation of the corresponding program content.
- [16] An interlocking display system, having:
an accumulation display device, equipped with:
a reception unit for receiving program content currently being broadcast and trigger information for special playback of the program content,
an accumulation means for accumulating the program content and the trigger information,
a metadata interpretation unit for interpreting the trigger information of the program content currently being broadcast or the accumulated program content and outputting mode information for special playback, and
an accumulation video processing unit for extracting at least a part of the accumulated program content based on mode information from the trigger information, reconstructing the extracted program content based on the mode information, and outputting the reconstructed program content; and
a mobile information terminal equipped with:
an input unit that receives input from a user,
a transmission unit that transmits the user selection information received by the input unit to the accumulation display device,
a reception unit that receives push distribution of program content reconstructed based on the user selection information from the accumulation display device, and
a display unit that displays the received reconstructed program content.

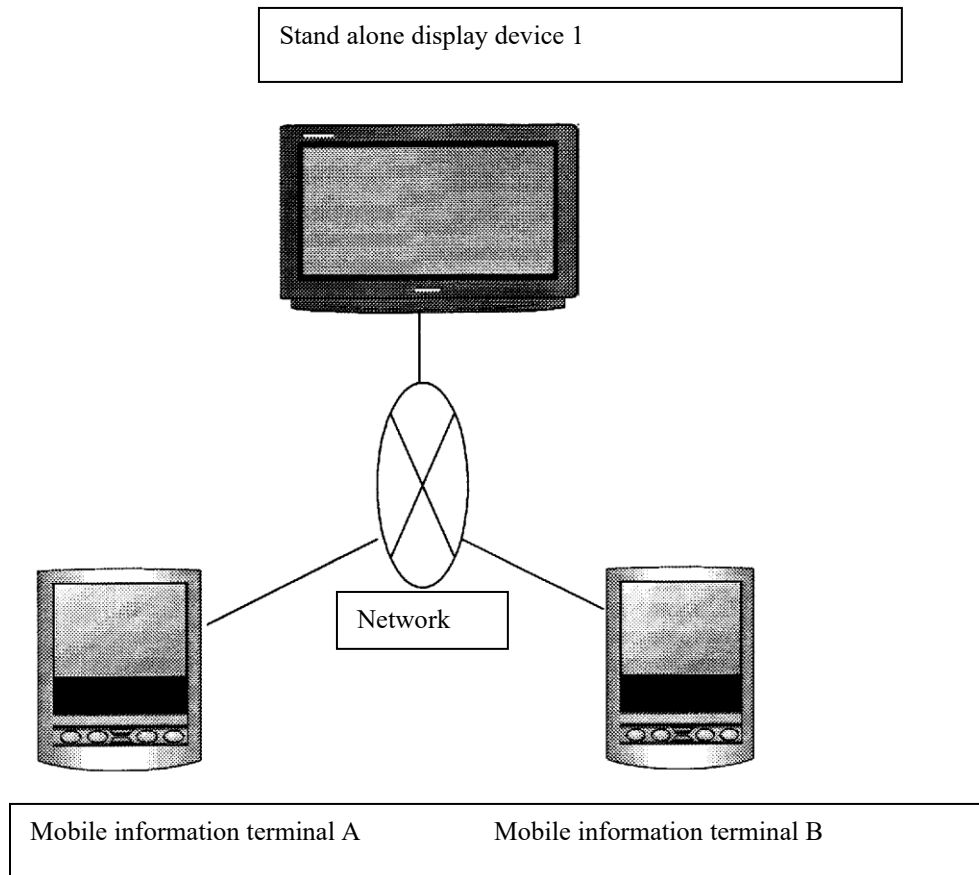
- [17] The linked display system according to claim 16, wherein the accumulation display device is a server and transmits the reconstructed program content to a mobile information terminal via a network.
- [18] A linked display method,
wherein in a method for displaying program contents in a linked manner using an accumulation display device that reproduces program contents being broadcast and an information terminal that performs special reproduction of the program contents in a linked manner with the accumulation display device,
the accumulation display device has:
a step of receiving the program content being broadcast and trigger information for special playback of the program content,
a step of accumulating each of the program contents and the trigger information, and
a step of extracting at least a part of the accumulated program content using mode information from the trigger information, reconstructing the program content extracted based on the mode information, and outputting the reconstructed program content;
while the information terminal has:
a step of receiving a push distribution of the reconstructed program content from the accumulation display device, and
a step of displaying the received reconstructed program content.

[FIG. 1]



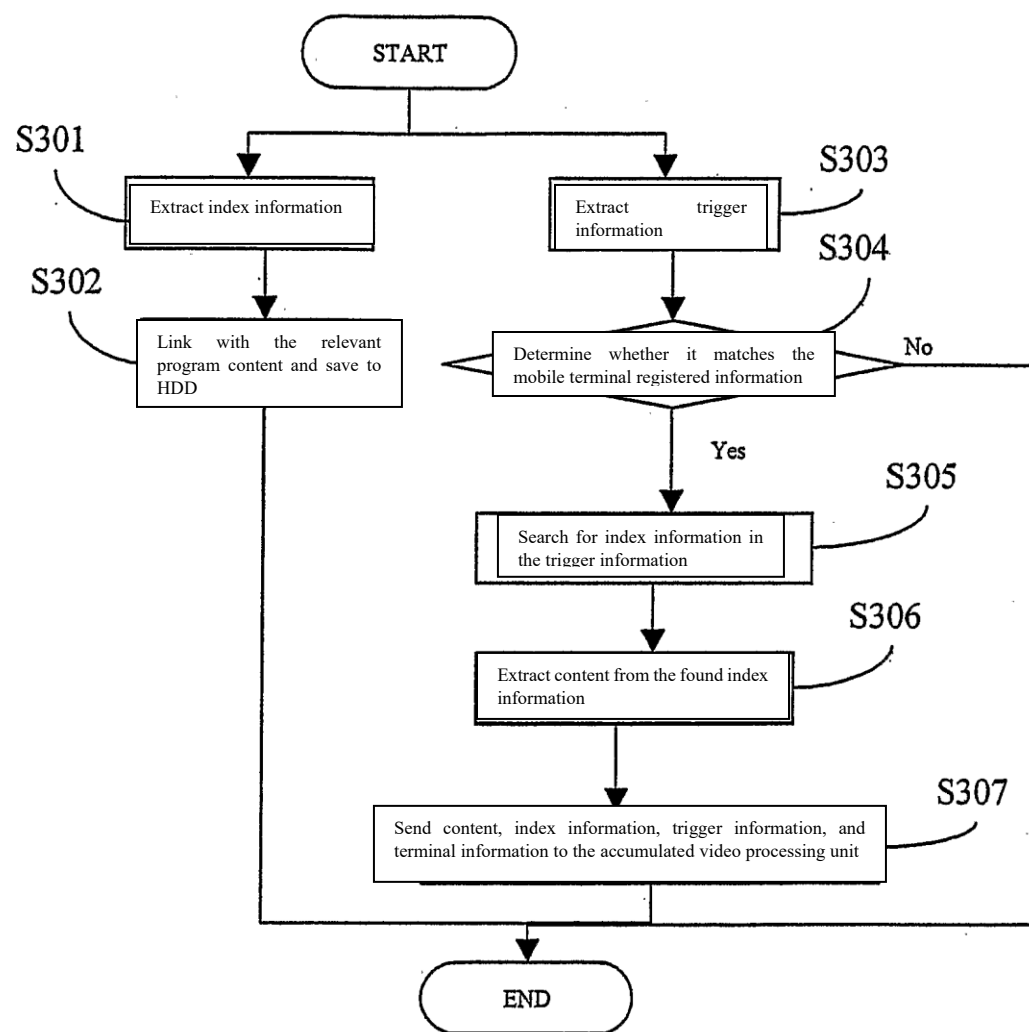
Replacement sheet (Regulation 26)

[FIG. 2]



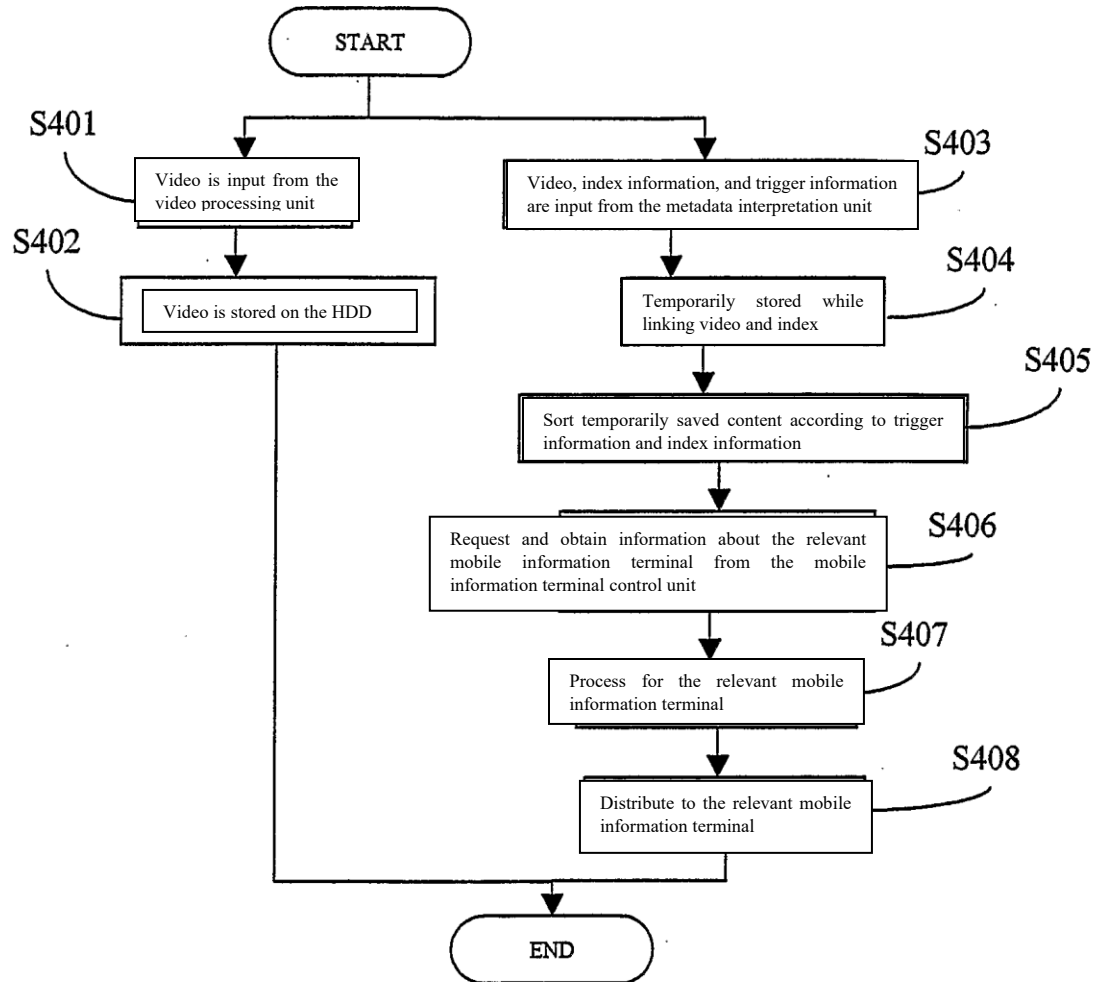
Replacement sheet (Regulation 26)

[FIG. 3]

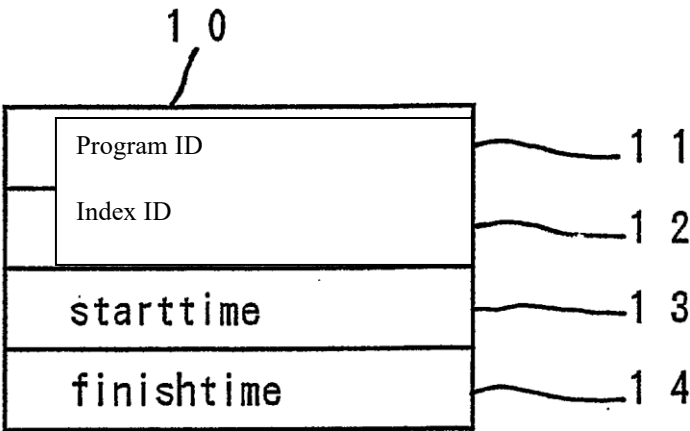


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[FIG. 4]



[FIG. 5]



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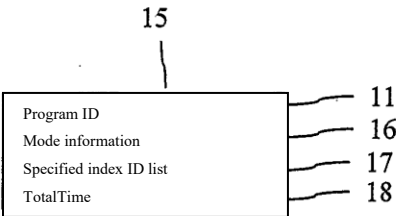
[FIG. 6]

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

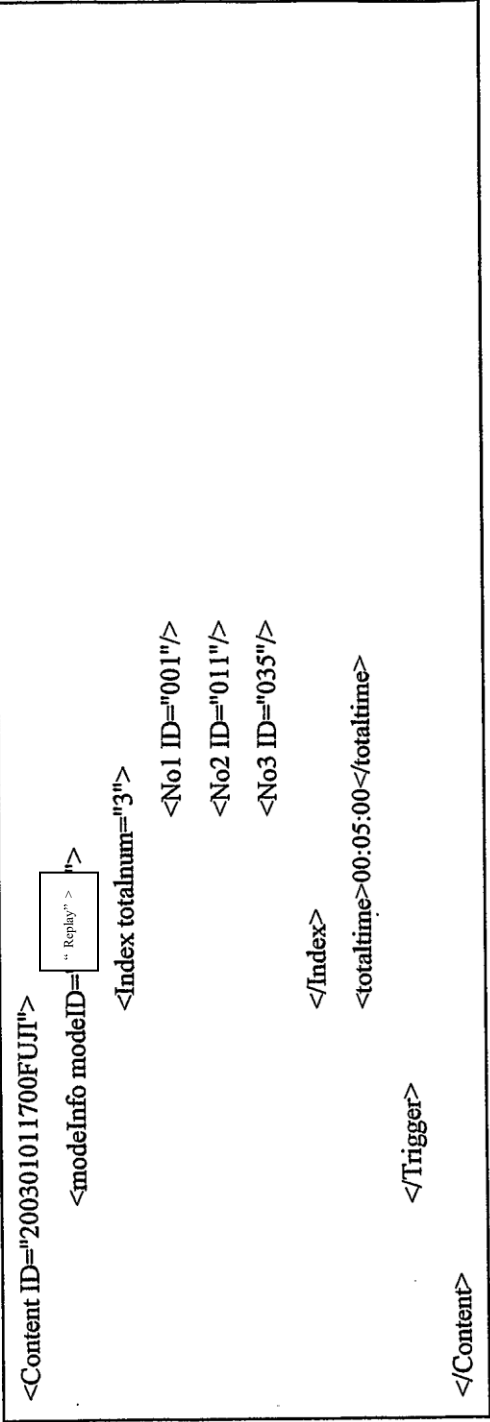
Replacement sheet (Regulation 26)

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[FIG. 7]



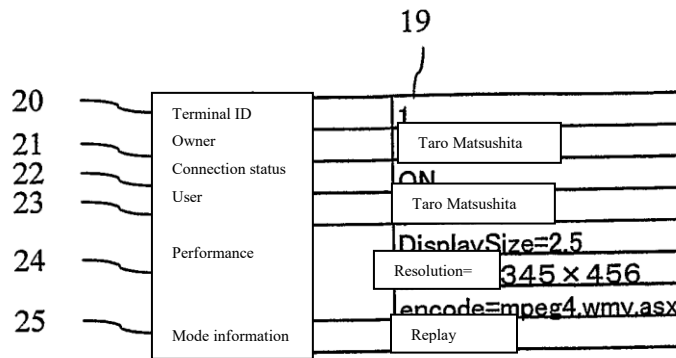
[FIG. 8]



Replacement sheet (Regulation 26)

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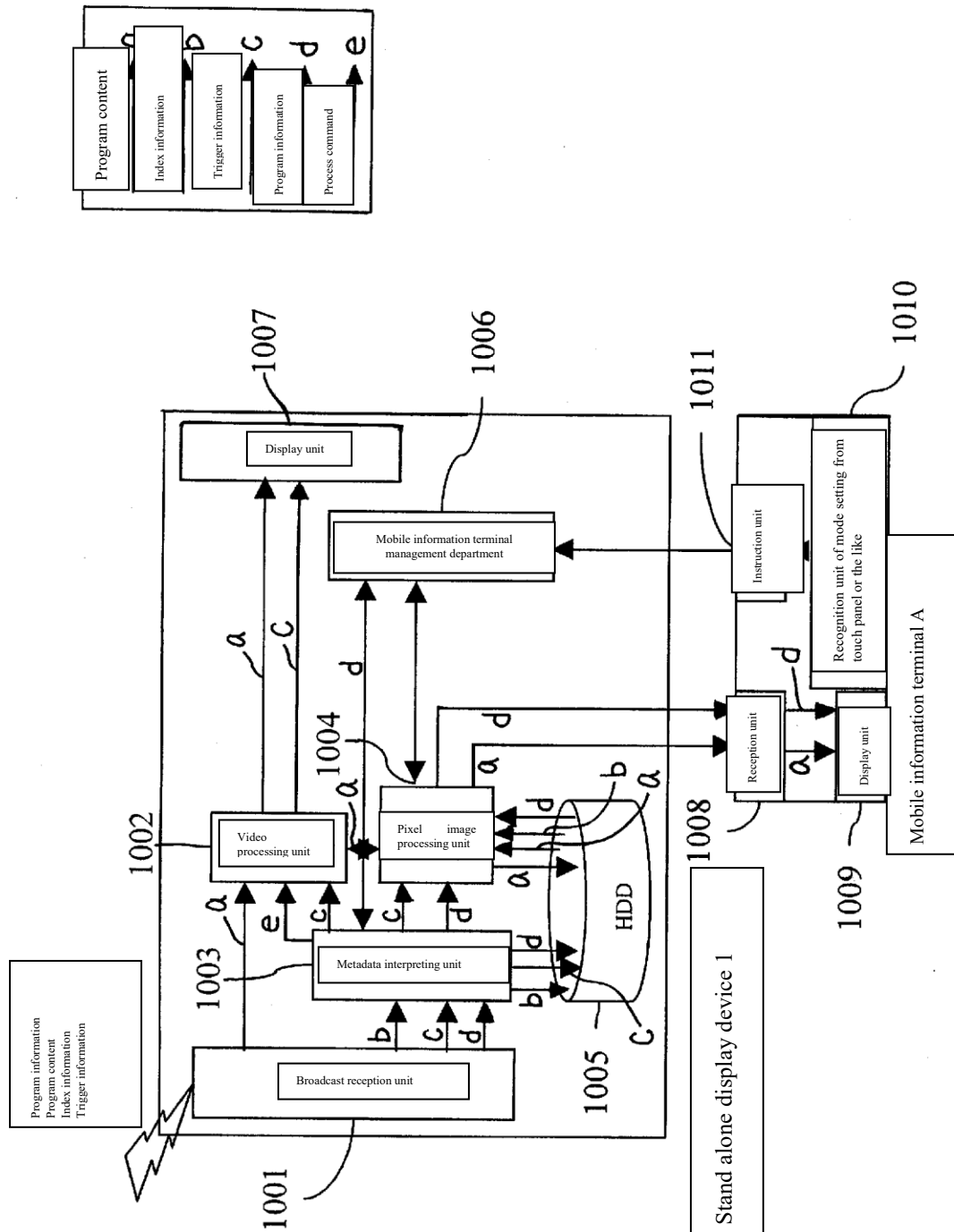
[FIG. 9]



Replacement sheet (Regulation 26)

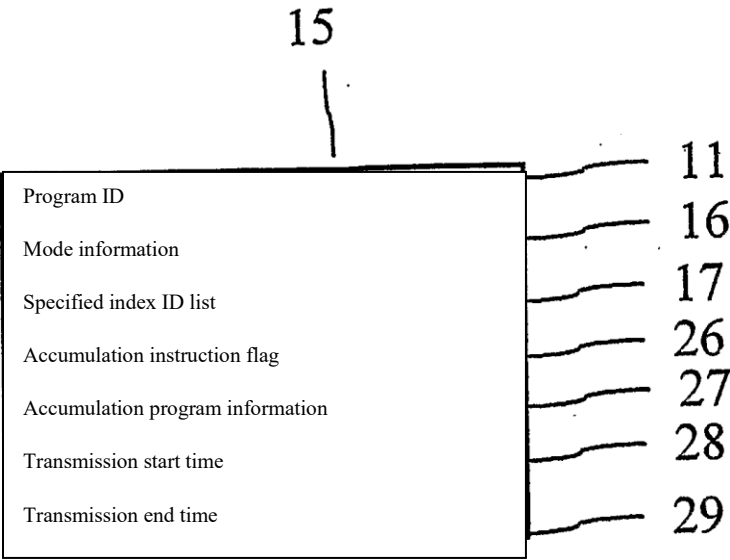
10/23

[FIG. 10]



Replacement sheet (Regulation 26)

[FIG. 11]



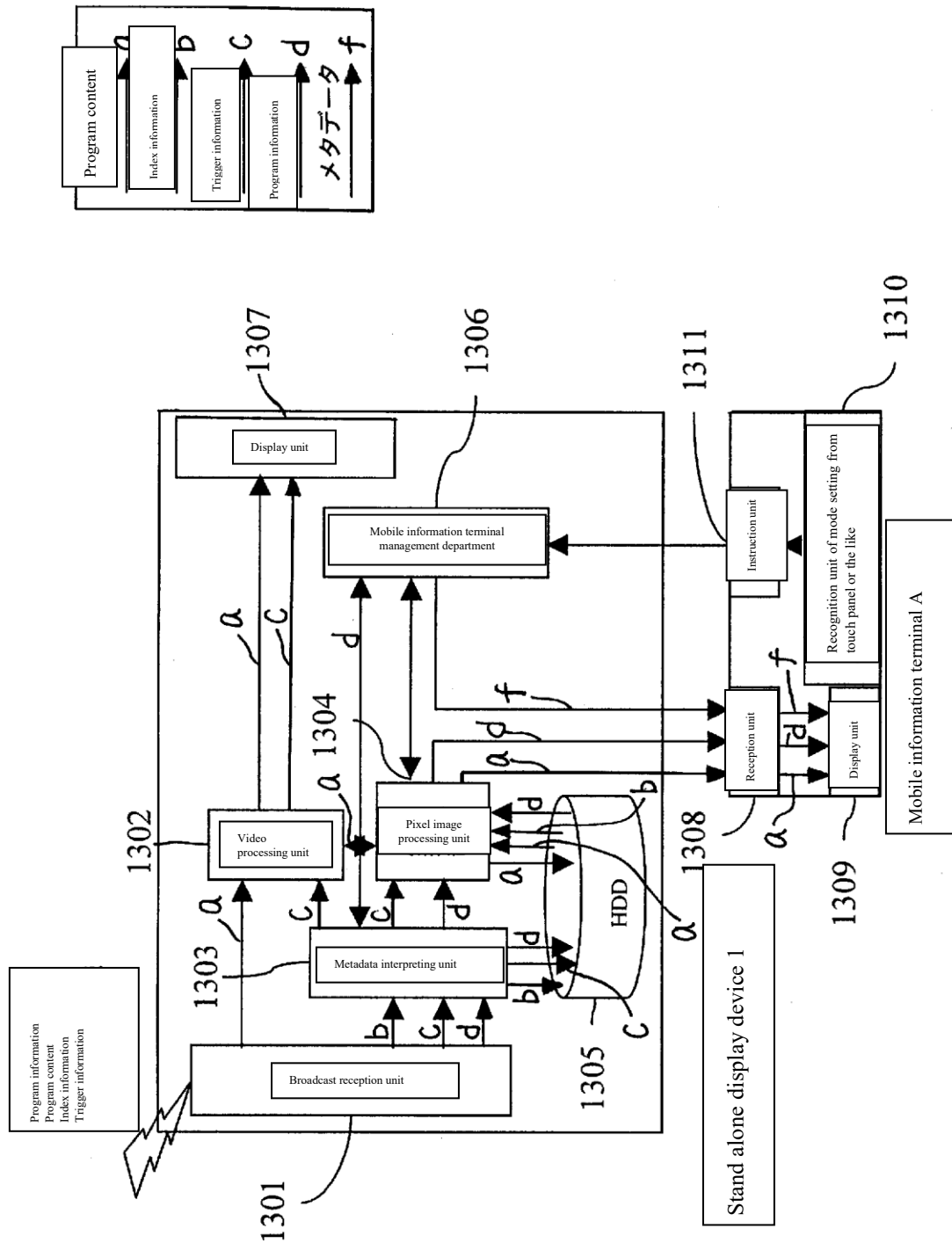
[FIG. 12]

```
<Content ID="200301011700FUJI">
  <modelInfo modelID modelID="200301011700FUJI">
    <Index>
      <No1 ID="999"/>
    </Index>
    <totaltime>00:05:00</totaltime>
    <Indexgrade/>
    <RecodingInfo>
      <flag>ON</flag>
      <Info ID="ex001">
        <Time strat="200301011700" stop="200301011708"/>
      </Info>
    </RecodingInfo>
  </modelInfo>
</Content>
```

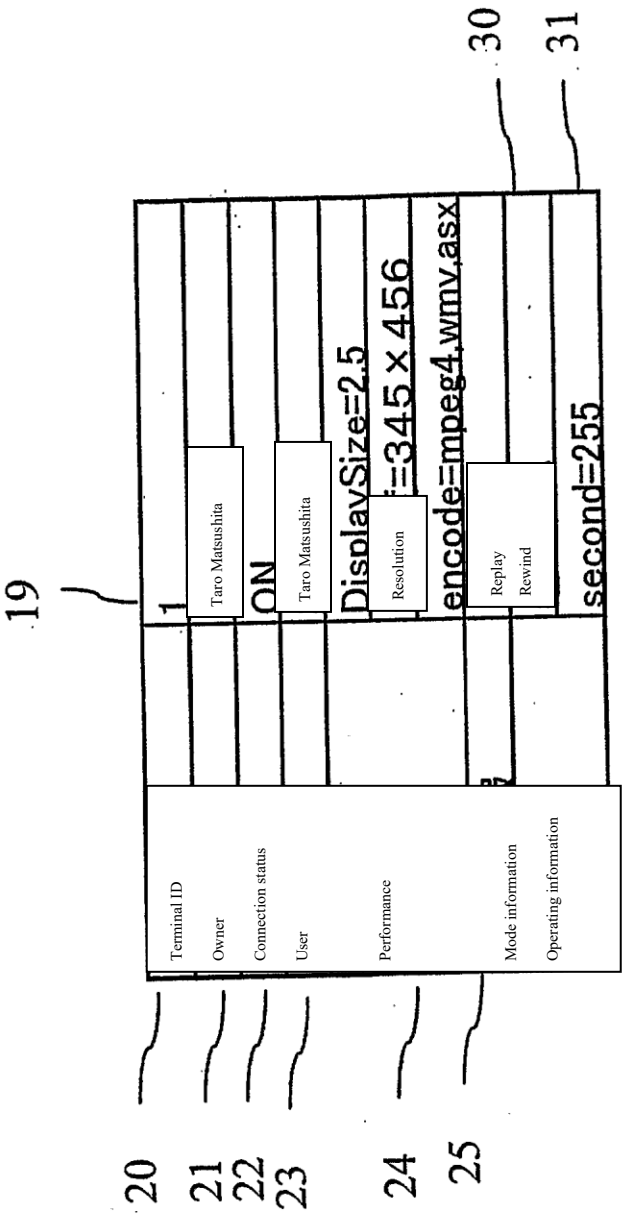
" Previous highlight" >

Episode 10 highlight<Info>

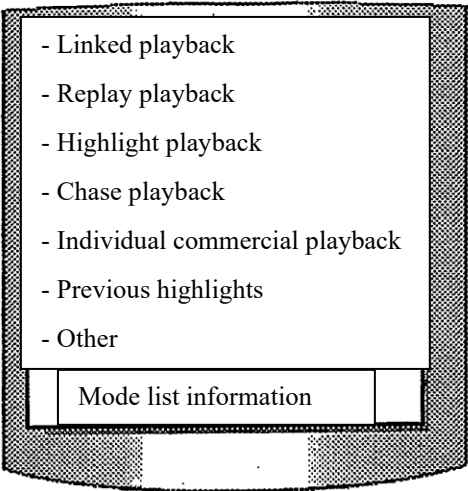
[FIG. 13]



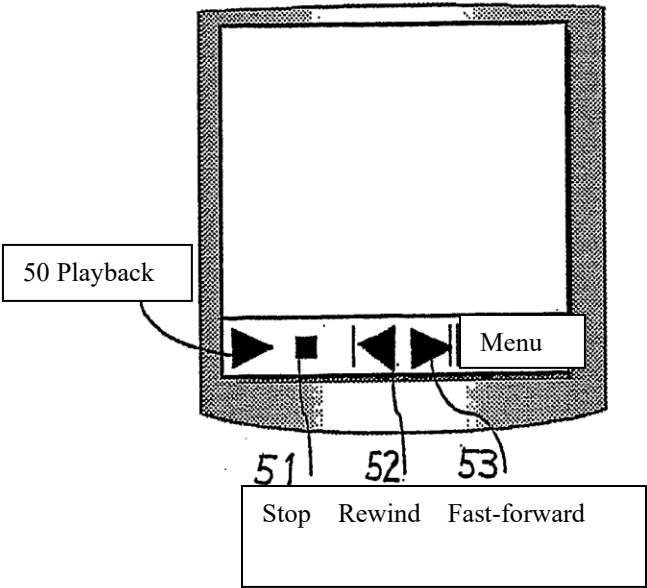
[FIG. 14]



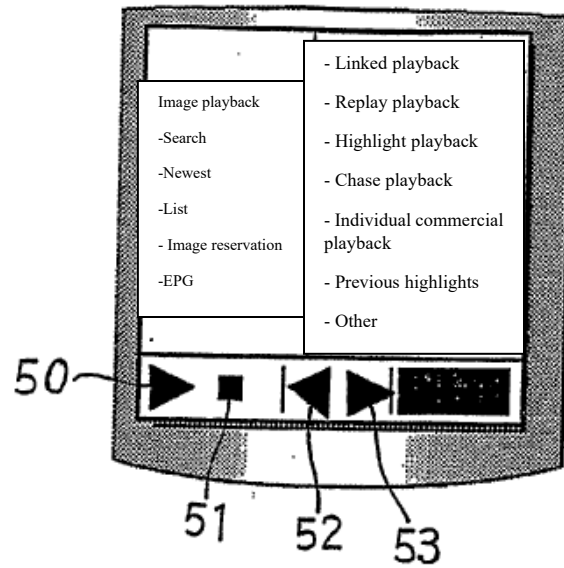
[FIG. 15]



[FIG. 16]

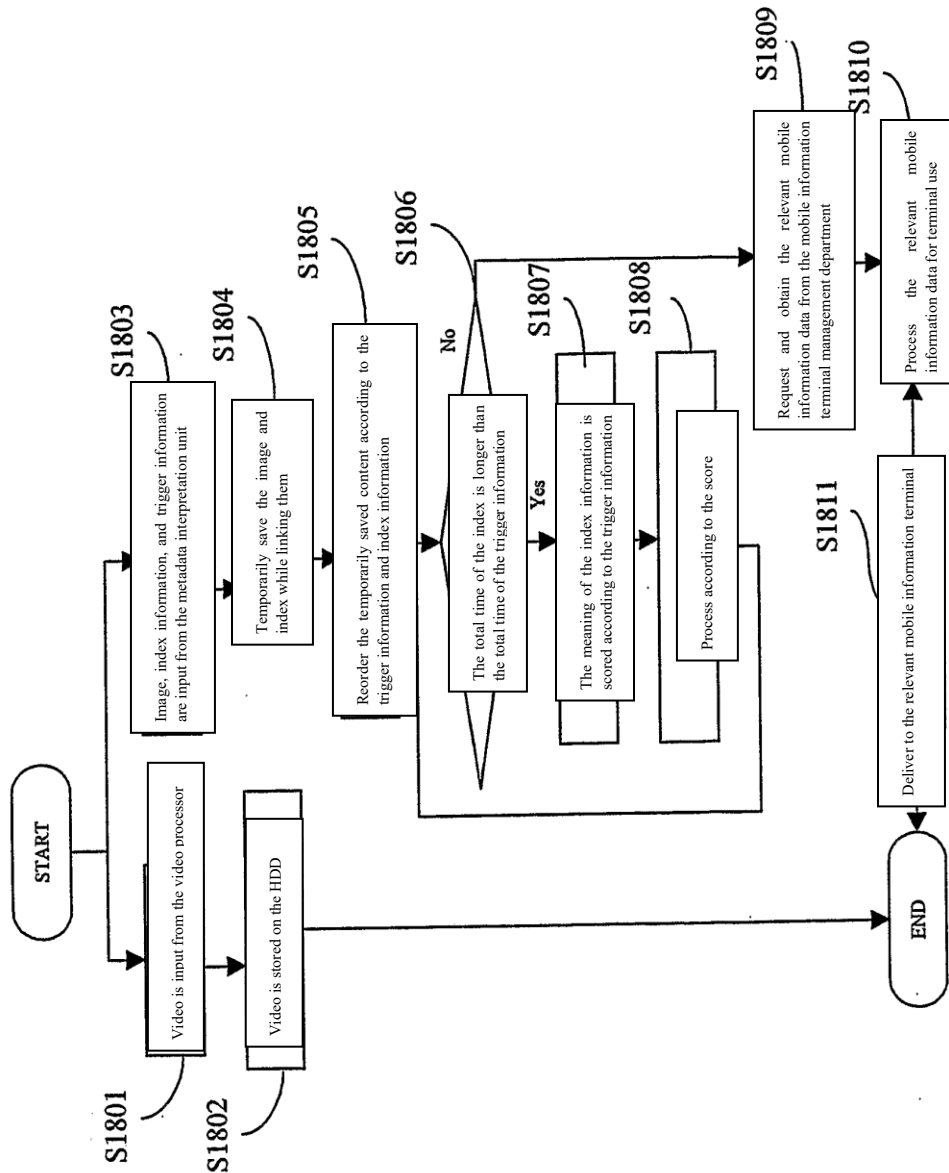


[FIG. 17]



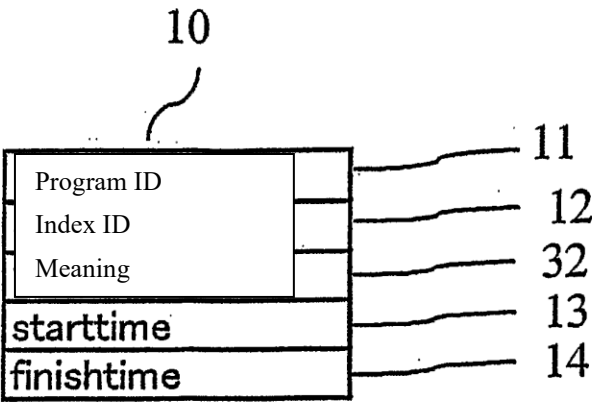
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[FIG. 18]

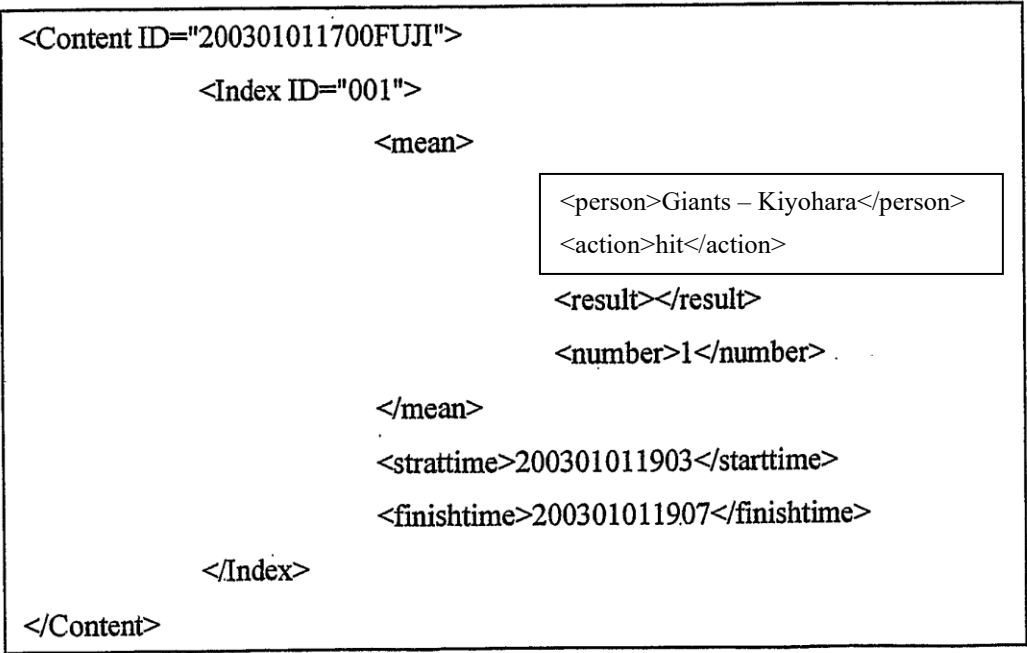


Replacement sheet (Regulation 26)

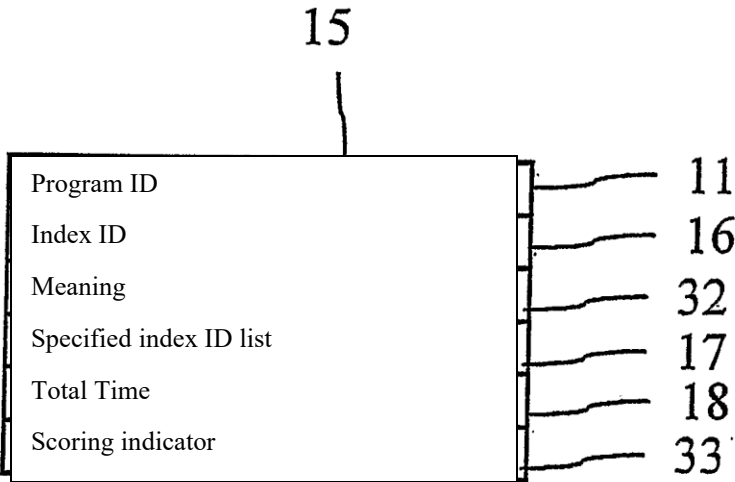
[FIG. 19]



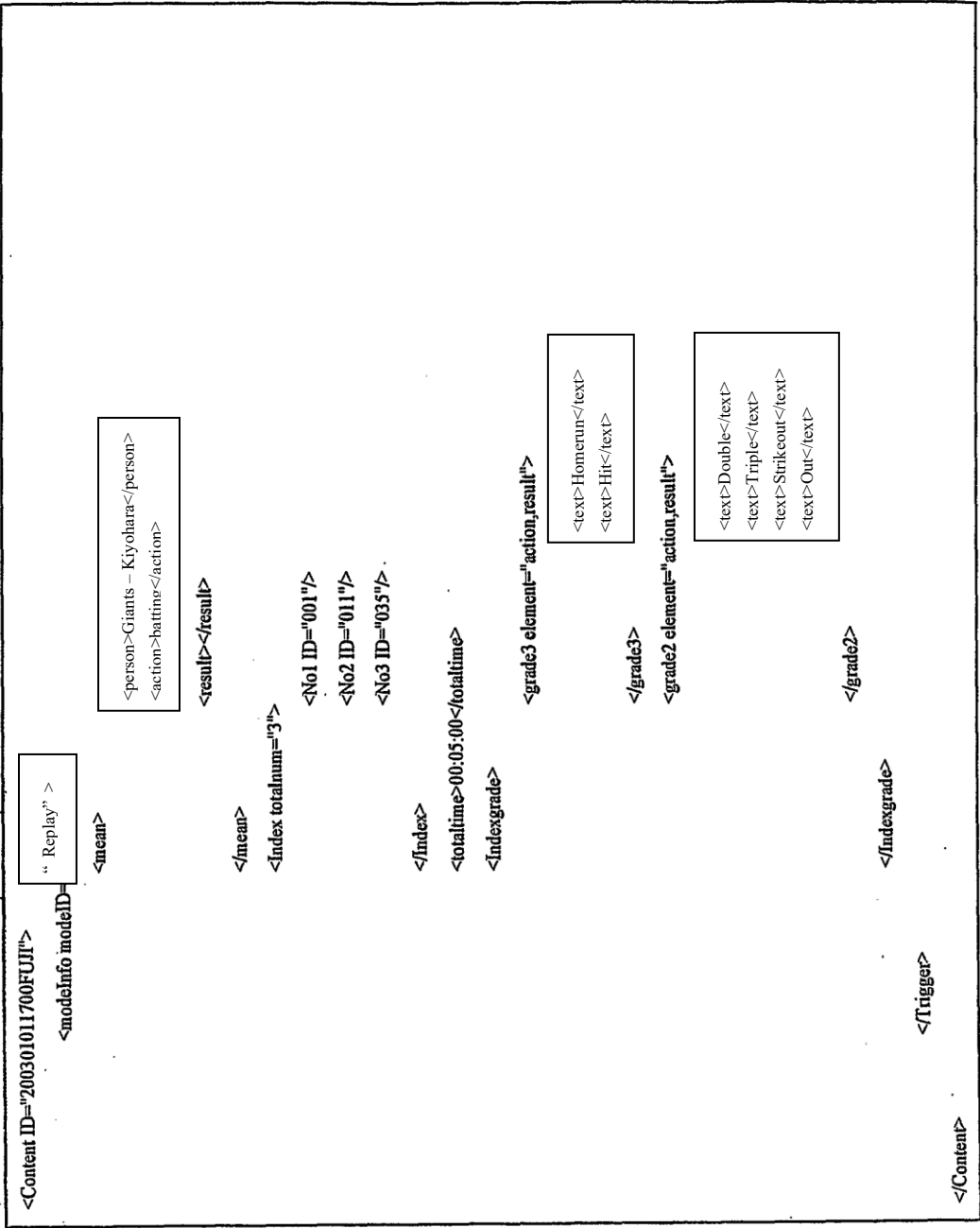
[FIG. 20]



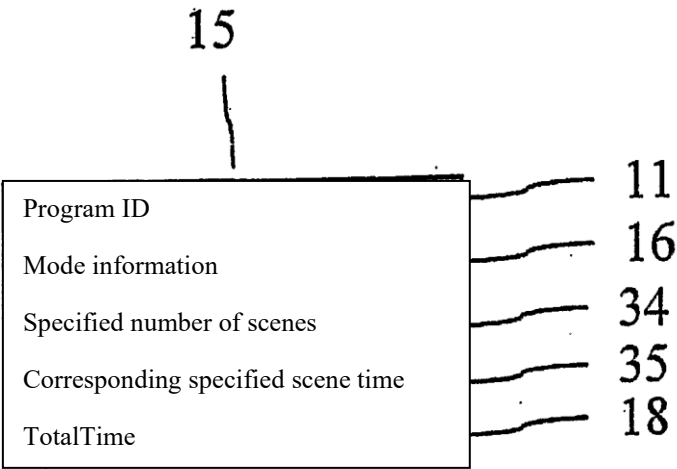
[FIG. 21]



[FIG. 22]



[FIG. 23]



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[FIG. 24]

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<Content ID="200301011700FUJI">
  <modelInfo modelID="Replay">
    <Index totalnum="3">
      <No1>
        <starttime>00:05:00</starttime>
        <duration>00:02:00</duration>
      </No1>
      <No2>
        <starttime>00:10:00</starttime>
        <duration>00:02:00</duration>
      </No2>
      <No3>
        <starttime>00:15:00</starttime>
        <duration>00:01:00</duration>
      </No3>
    </Index>
    <totaltime>00:05:00</totaltime>
  </modelInfo>
  <Trigger>
  </Trigger>
</Content>
```

Replacement sheet (Regulation 26)

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[FIG. 25]

36		
11	Program ID	1
37	Service ID (channel)	1
38	Start time	19:00:00
39	Time (duration)	2:00:00
40	Title	Ongoing drama "Tomorrow's trip"
41	Key word	Despair
		Effort
		Hope
42	Performer	Taro Matsushita
	Actor	Hanako Matsushita
	Screenplay	Ichiro Matsushita
	Performer	Jiro Matsushita
43	Genre	Drama
44	Series	Fiction
45	Prohibited view	No. 3 (total 12)
46	Linked viewing service (mobile)	Absent
		Present
16	Mode information	Digest No. 3 as is
		Matsushita Ichiro highlight
		Matsushita Jiro highlight
		Previous portion (No. 2) highlight
		Highlight until previous time (No. 1, No. 2)

Replacement sheet (Regulation 26)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2005/005879

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl.⁷ H04N7/173, 5/44, 5/76

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl.⁷ H04N7/173, 5/44, 5/76

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho	1922-1996	Jitsuyo Shinan Toroku Koho	1996-2005
Kokai Jitsuyo Shinan Koho	1971-2005	Toroku Jitsuyo Shinan Koho	1994-2005

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 2003-163847 A (Sharp Corp.), 06 June, 2003 (06.06.03), All pages; all drawings (Family: none)	1-18
Y	JP 2003-304523 A (NTT Docomo Inc.), 24 October, 2003 (24.10.03), All pages; all drawings & US 2003/0154217 A1 & EP 1335600 A2 & CN 1437122 A	1-18
Y	JP 2003-319366 A (Sharp Corp.), 07 November, 2003 (07.11.03), All pages; all drawings (Family: none)	1-18

☒ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

20 July, 2005 (20.07.05)

Date of mailing of the international search report

02 August, 2005 (02.08.05)

Name and mailing address of the ISA/

Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

Form PCT/ISA/210 (second sheet) (January 2004)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2005/005879

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 2003-196491 A (Sony Corp.), 11 July, 2003 (11.07.03), All pages; all drawings (Family: none)	1-18
A	JP 2003-259316 A (Toshiba Corp.), 12 September, 2003 (12.09.03), All pages; all drawings & US 2003/0161610 A1 & EP 1351505 A2	1-18
P,X	JP 2004-173120 A (Toshiba Corp.), 17 June, 2004 (17.06.04), All pages; all drawings (Family: none)	1-3, 6, 16-18

Form PCT/ISA/210 (continuation of second sheet) (January 2004)

国際調査報告

国際出願番号 PCT/J P 2005/005879

A. 発明の属する分野の分類 (国際特許分類 (IPC))

Int.Cl.⁷ H04N7/173, 5/44, 5/76

B. 調査を行った分野

調査を行った最小限資料 (国際特許分類 (IPC))

Int.Cl.⁷ H04N7/173, 5/44, 5/76

最小限資料以外の資料で調査を行った分野に含まれるもの

日本国実用新案公報	1922-1996年
日本国公開実用新案公報	1971-2005年
日本国実用新案登録公報	1996-2005年
日本国登録実用新案公報	1994-2005年

国際調査で使用した電子データベース (データベースの名称、調査に使用した用語)

C. 関連すると認められる文献

引用文献の カテゴリー*	引用文献名 及び一部の箇所が関連するときは、その関連する箇所の表示	関連する 請求の範囲の番号
Y	J P 2003-163847 A (シャープ株式会社) 2003. 06. 06, 全頁, 全図 (ファミリーなし)	1-18
Y	J P 2003-304523 A (株式会社エヌ・ティ・ティ・ ドコモ) 2003. 10. 24, 全頁, 全図 &US 2003/0154217 A1 &EP 1335600 A2 &CN 1437122 A	1-18

☒ C欄の続きにも文献が列挙されている。☐ パテントファミリーに関する別紙を参照。

* 引用文献のカテゴリー

「A」 特に関連のある文献ではなく、一般的技術水準を示すもの
「E」 国際出願日前の出願または特許であるが、国際出願日以後に公表されたもの
「L」 優先権主張に疑義を提起する文献又は他の文献の発行日若しくは他の特別な理由を確立するために引用する文献 (理由を付す)
「O」 口頭による開示、使用、展示等に言及する文献
「P」 国際出願日前で、かつ優先権の主張の基礎となる出願

の日の後に公表された文献

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「Y」 特に関連のある文献であって、当該文献と他の1以上の文献との、当業者にとって自明である組合せによって進歩性がないと考えられるもの
「&」 同一パテントファミリー文献

国際調査を完了した日

20. 07. 2005

国際調査報告の発送日

02.08.2005

国際調査機関の名称及びあて先

日本国特許庁 (ISA/J P)

郵便番号 100-8915

東京都千代田区霞が関三丁目4番3号

特許庁審査官 (権限のある職員)

古川 哲也

電話番号 03-3581-1101 内線 3541

5 C

9746

様式 PCT/ISA/210 (第2ページ) (2004年1月)

C (続き) . 関連すると認められる文献		
引用文献の カテゴリー*	引用文献名 及び一部の箇所が関連するときは、その関連する箇所の表示	関連する 請求の範囲の番号
Y	JP 2003-319366 A (シャープ株式会社) 2003. 11. 07, 全頁, 全図 (ファミリーなし)	1-18
Y	JP 2003-196491 A (ソニー株式会社) 2003. 07. 11, 全頁, 全図 (ファミリーなし)	1-18
A	JP 2003-259316 A (株式会社東芝) 2003. 09. 12, 全頁, 全図 &US 2003/0161610 A1 &EP 1351505 A2	1-18
P, X	JP 2004-173120 A (株式会社東芝) 2004. 06. 17, 全頁, 全図 (ファミリーなし)	1-3, 6, 16-18

様式PCT/ISA/210 (第2ページの続き) (2004年1月)