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(71) Applicants *(for all designated States except US)*: **Fuji Photo Film Co., Ltd.** [JP/JP]; No. 210 Nakanuma, Minami-Ashigara-shi, Kanagawa 2500193 (JP). **KONICA MINOLTA PHOTO IMAGING, INC.** [JP/JP]; 1-26-2 Nishishinjuku, Shinjuku-ku, Tokyo, 1630512 (JP). **EASTMAN KODAK COMPANY** [US/US]; 343 State Street, Rochester, New York, 14650 (US).

(72) Inventors; and

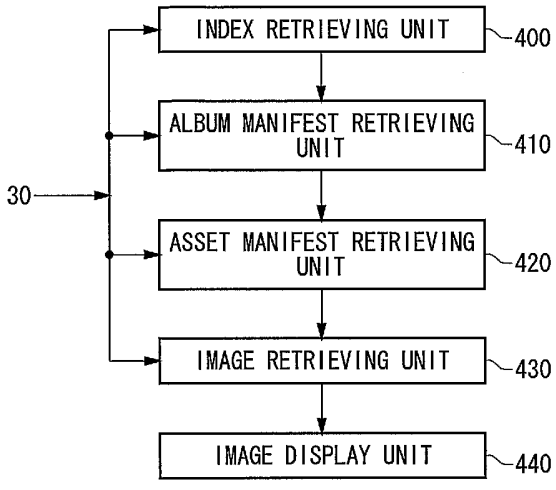
(75) Inventors/Applicants *(for US only)*: **OHTSUKA, Shuichi** [JP/JP]; c/o Fuji Photo Film Co., Ltd., 798, Miyanodai, Kaisei-machi, Ashigarakami-gun, Kanagawa, 2588538 (JP). **HARA, Makoto** [JP/JP]; c/o Fuji Photo Film Co., Ltd., 798, Miyanodai, Kaisei-machi, Ashigarakami-gun, Kanagawa, 2588538 (JP). **UEDA, Yutaka** [JP/JP]; c/o Konica Minolta Photo Imaging, Inc., 2970 Ishikawa-machi, Hachioji-shi, Tokyo, 1928505 (JP). **HUNG, Po-Chieh** [CN/JP]; c/o Konica Minolta Technology Center, Inc., 2970 Ishikawa-machi, Hachioji-shi, Tokyo, 1928505 (JP). **WHITCHER, Timothy J.** [US/US]; c/o Eastman Kodak Company, 1700 Dewey Avenue, Rochester, New York, 14650 (US). **ARUJUNAN, Thiagarajah** [US/US]; c/o Eastman Kodak Company, 2400 Mt.Read Blvd, Rochester, New York, 14650 (US).

(74) Agent: **RYUKA, Akihiro**; 5F, Shinjuku Square Tower, 22-1, Nishi-Shinjuku 6-chome, Shinjuku-ku, Tokyo 163-1105 (JP).

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(54) Title: AN IMAGE RETRIEVING APPARATUS, AN IMAGE RETRIEVING METHOD, AND A RECORDING MEDIUM




(57) Abstract: An image retrieving apparatus for retrieving a plurality of original images from a recording medium on which a plurality of original images taken are recorded, includes an index retrieving unit for retrieving an index manifest file from the recording medium; an asset manifest retrieving unit for retrieving an asset manifest file from the recording medium by using a path, stored in the retrieved index manifest file, to the asset manifest file; and an image retrieving unit for retrieving at least a part of the plurality of original images from the recording medium by using a path, stored in the retrieved asset manifest file, to each of the plurality of original images, wherein the recording medium includes the plurality of original images; the asset manifest file storing the path to each of the plurality of original images; and the index manifest file storing the path to the asset manifest file, and the index manifest file is stored on a predetermined path which is not different for each recording medium.

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# DESCRIPTION

## AN IMAGE RETRIEVING APPARATUS, AN IMAGE RETRIEVING METHOD, AND A RECORDING MEDIUM

The present application attaches hereto Appendices A-1, A-2 and A-3, the contents of which are incorporated herein by reference.

The present application claims priority from United State Patent Application No. 11/059,681 filed on February 17, 2005, the content of which is also incorporated herein by reference.

Reference is also made to commonly assigned U.S. Patent Applications Serial Nos. 11/186,868 filed on July 22, 2005 and 11/149,347 filed on June 10, 2005, the disclosure of which is incorporated herein by reference.

Technical Field

The present invention relates to an image retrieving apparatus, an image retrieving method, and a recording medium. More particularly, the present invention relates to an image retrieving apparatus and an image retrieving method for retrieving a plurality of original images from a recording medium on which a plurality of original images taken are recorded and the recording medium.

Background Art

Conventionally, an image retrieving apparatus for retrieving original image(s) taken which are recorded on a recording medium from the recording medium has been known. Here, for example, Fujicolor® CD determined by the applicant of the present application is known as a format of the recording medium.

However, a region of the above recording medium, on which the original image(s) are recorded, that is, a path to each of the original image(s) is varied according to the format of the

recording medium. Thus, in case a user intends to use an image retrieving apparatus, there has been a problem that the user cannot use the image retrieving apparatus if the retrieving apparatus does not correspond to the format of a recording medium owned by the user.

DISCLOSURE OF THE INVENTION

Therefore, it is an object of the present invention to provide an image retrieving apparatus, an image retrieving method, and a recording medium, which are capable of overcoming the above drawbacks accompanying the conventional art. The above and other objects can be achieved by combinations described in the independent claims. The dependent claims define further advantageous and exemplary combinations of the present invention.

According to the first aspect of the present invention, an image retrieving apparatus for retrieving a plurality of original images from a recording medium on which a plurality of original images taken are recorded, includes an index retrieving unit for retrieving an index manifest file from the recording medium; an asset manifest retrieving unit for retrieving an asset manifest file from the recording medium by using a path, stored in the retrieved index manifest file, to the asset manifest file; and an image retrieving unit for retrieving at least a part of the plurality of original images from the recording medium by using a path, stored in the retrieved asset manifest file, to each of the plurality of original images, wherein the recording medium includes the plurality of original images; the asset manifest file storing the path to each of the plurality of original images; and the index manifest file storing the path to the asset manifest file, and the index manifest file is stored on a predetermined path which is not different for each recording medium.

The recording medium may further include a plurality of display images generated by decreasing resolution of the plurality of original images, the asset manifest file may further

store a path to each of the plurality of display images, the image retrieving unit may retrieve at least a part of the plurality of display images from the recording medium by using the path, stored in the retrieved asset manifest file, to each of the plurality of display images, and the image retrieving apparatus may further include an image display unit for displaying a retrieved display image.

The recording medium may further include the album manifest file which determines a displaying order of at least a part of the plurality of the original images, the index manifest file may further store the path to the album manifest file, the image retrieving unit may retrieve the display image in case the path to the display image generated from the original image is stored in the asset manifest file, or the original image in case the path to the display image generated from the original image is not stored in the asset manifest file, for each of the original images which should be displayed according to the displaying order determined by the retrieved album manifest file, the image display unit displays the display image or the original image, and the image retrieving apparatus may further include an album manifest retrieving unit for retrieving an album manifest file from the recording medium by using a path, stored in the retrieved index manifest file, to the album manifest file.

According to the second aspect of the present invention, an image retrieving method for retrieving a plurality of original images from a recording medium on which a plurality of original images taken are recorded, includes an index retrieving step of retrieving an index manifest file from the recording medium; an asset manifest retrieving step of retrieving an asset manifest file from the recording medium by using a path, stored in the retrieved index manifest file, to the asset manifest file; and an image retrieving step of retrieving at least a part of the plurality of original images from the recording medium by using a path, stored in the retrieved asset manifest file, to each of the plurality of original images, wherein the recording medium includes the plurality of original images; the asset manifest

file storing the path to each of the plurality of original images; and the index manifest file storing the path to the asset manifest file, and the index manifest file is stored on a predetermined path which is not different for each recording medium.

The recording medium may further include a plurality of display images generated by decreasing resolution of the plurality of original images, the asset manifest file may further store a path to each of the plurality of display images, and during the image retrieving step, at least a part of the plurality of display images is retrieved from the recording medium by using the path, stored in the retrieved asset manifest file, to each of the plurality of display images. The image retrieving method may further include an image display step of displaying a retrieved display image.

The recording medium may further include the album manifest file which determines a displaying order of at least a part of the plurality of the original images, the index manifest file may further store the path to the album manifest file, and during the image retrieving step, the display image is retrieved in case the path to the display image generated from the original image is stored in the asset manifest file, or the original image is retrieved in case the path to the display image generated from the original image is not stored in the asset manifest file, for each of the original images which should be displayed according to the displaying order determined by the retrieved album manifest file. During the image display step, the display image or the original image may be displayed. The image retrieving method may further include an album manifest retrieving step of retrieving an album manifest file from the recording medium by using a path, stored in the retrieved index manifest file, to the album manifest file.

According to the third aspect of the present invention, a recording medium on which a plurality of original images taken are recorded, includes a plurality of original images; an asset manifest file storing a path to each of the plurality of original images; and an index manifest file storing a path to the asset

manifest file, wherein the index manifest file is stored on a predetermined path which is not different for each recording medium.

The recording medium may further include a plurality of display images generated by decreasing resolution of the plurality of original images, wherein the asset manifest file may further store a path to each of the plurality of display images.

The recording medium may further include an album manifest file which determines a displaying order of at least a part of the plurality of original images, wherein the index manifest file may further store the path to the album manifest file.

The summary of the invention does not necessarily describe all necessary features of the present invention. The present invention may also be a sub-combination of the features described above. The above and other features and advantages of the present invention will become more apparent from the following description of the embodiments taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 shows an example of the configuration of an image using system 10 which is an example of an image using system according to an embodiment of the present invention.

Fig. 2 shows an example of a directory construction and a file construction of a recording medium 30 according to an embodiment of the present invention.

Fig. 3 is a block diagram showing an example of a function configuration of an image recording apparatus 20 according to an embodiment of the present invention.

Fig. 4 is a block diagram showing an example of a function configuration of an image retrieving apparatus 40 according to an embodiment of the present invention.

Fig. 5 is a flowchart showing an example of a flow of process by an image recording method using the image recording apparatus 20 according to an embodiment of the present invention.

Fig. 6 is a flowchart showing an example of a flow of process by an image retrieving method using the image retrieving apparatus 40 according to an embodiment of the present invention.

Fig. 7 is a flowchart showing another example of a flow of process by an image recording method using the image recording apparatus 20 according to an embodiment of the present invention.

Fig. 8 shows an example of the configuration of an image using system 50 which is another example of the image using system according to an embodiment of the present invention.

Fig. 9 is a flowchart showing an example of a flow of process by an image recording method using an image recording apparatus 70 according to an embodiment of the present invention.

BEST MODE FOR CARRYING OUT THE INVENTION

The invention will now be described based on the preferred embodiments, which do not intend to limit the scope of the present invention, but exemplify the invention. All of the features and the combinations thereof described in the embodiment are not necessarily essential to the invention.

Fig. 1 shows an example of the configuration of an image using system 10 which is an example of an image using system according to an embodiment of the present invention. The image using system 10 according to the present embodiment records an original image taken on a recording medium 30, or retrieves the original image recorded on the recording medium 30 and displays or prints the retrieved original image. It is an object of the image using system 10 according to the present embodiment to correctly retrieve a plurality of original images regardless of which region of the recording medium 30 the plurality of original images are recorded on. Further, in case of recording a new original image on the recording medium on which the original images are previously recorded, it is another object of the image using system 10 according to the present embodiment to prevent the original images previously recorded from being removed without intention. Furthermore, in case of adding a new original image on the recording medium 30 on which the plurality of original

images and a manifest showing a slideshow based on the plurality of original images are previously recorded, it is another object of the image using system 10 according to the present embodiment to enhance using efficiency of capacity of the recording medium 30.

The image using system 10 according to the present embodiment includes an image recording apparatus 20, a recording medium 30, and an image retrieving apparatus 40. The image recording apparatus 20 records a plurality of original images, for example, taken by a digital camera, on the recording medium 30. Here, the original image may be a still picture or a moving picture. Further, the image recording apparatus 20 may be an image taking apparatus such as a digital camera or an information processing apparatus such as a personal computer. The image retrieving apparatus 40 retrieves the plurality of original images taken from the recording medium 30 on which the plurality of original images are recorded. Then, the image retrieving apparatus 40 provides a user with the retrieved original images by displaying or printing them. The image retrieving apparatus 40 may be a video reproducing apparatus such as a DVD-Video player, an information processing apparatus such as a personal computer, or a kiosk terminal provided in a DPE service shop.

According to the present figure, the image recording apparatus 20 and the image retrieving apparatus 40 may be provided separately from each other or one of them may have the function and configuration of the other. Further, each of the image recording apparatus 20 and the image retrieving apparatus 40 may include a plurality of apparatus different from each other and the plurality of apparatus may perform a function of the recording apparatus 20 or the image retrieving apparatus 40 by communicating with each other.

Fig. 2 shows an example of a directory construction and a file construction of the recording medium 30 according to the present embodiment. The recording medium 30 according to the present embodiment stores an asset directory 300, an album

directory 330, an index manifest file 340, and a video stream 350 right under a root directory.

The asset directory 300 stores data used by the image using system 10 such as an original image taken, a voice, and a piece of music via a plurality of asset roll directory (310a and 310b; hereinafter, referred to 310) and a shared directory 320. Further, the asset directory 300 stores two roll asset roll directories 310 in the present figure but may have one roll asset roll directory or more than three roll asset roll directories.

The asset roll directory 310a stores a plurality of original images 312a, an asset manifest file 314a, and a display image directory 316a. Further, the asset roll directory 310a may further store a recorded voice. The plurality of original images 312a may be a still picture and a moving picture, for example, taken by a digital camera. The asset manifest file 314a stores a path to each of the plurality of original images 312a which are stored in the asset roll directory 310a. The display image directory 316a is placed in a lower level of the asset roll directory 310a and stores a plurality of display images 318a. The plurality of display images 318a are images which are displayed instead of the plurality of original images 312 and may be images generated by, for example, decreasing resolution of the plurality of original images. Further, the asset roll directory 310a may store a plurality of display image directories which are different in resolution, an aspect ratio, etc. of the display image. Thus, even in case each display apparatus and method for displaying the display image has different resolution and aspect ratio, it is possible to display images of good display quality which are suitable to the display apparatus and method. Further, the asset manifest file 314a stores further a path to each of the plurality of display images 318a.

The asset roll directory 310b stores a plurality of original images 312b, an asset manifest file 314b, and a display image directory 316b. As shown in the present embodiment, a

plurality of original images can be stored dividedly in a plurality of asset roll directories of the recording medium 30.

The shared director 320 stores a plurality of shared files 322 and a shared manifest file 324. The shared file may be a piece of music performed as a BGM in case at least a part of the original image 312 and the display image 318, which are stored in the asset roll directory 310, are displayed as a slideshow. The shared manifest file 324 stores a path to each of the plurality of shared files 322.

The album directory 330 stores a plurality of album manifest files 332. Each of the plurality of album manifest files 332 determines a displaying order of at least a part of the plurality of original images recorded on the recording medium 30 (312a and 312b; hereinafter, referred to 312). Specifically, the album manifest file 332 stores a path to the asset manifest files (314a, 314b; hereinafter, referred to 314) storing the path to each of the original images which should be displayed and an image identifier for identifying each of the images which should be displayed according to the displaying order. Further, in this case, the asset manifest file 314 may store the path to each of the plurality of original images and the image identifier for identifying the original image, correspondently.

The index manifest file 340 stores the path to each of the plurality of asset manifest files 314 and the path to each of the plurality of album manifest files 332. Further, the index manifest file 340 is not varied according to the recording medium 30 and is recorded on a predetermined path. Specifically, the index manifest file 340 may be recorded as a name of "PASSIDX.PVM" right under the root directory of the recording medium 30.

The video stream 350 may be a group of files or directories including a video stream of, for example, a DVD-Video format. Further, the video stream 350 may be a video stream showing a slideshow based on the displaying order determined by the album manifest file 332. Thus, it is possible for even a display device which cannot retrieve the album manifest file 332 and the display

image 318 to display a slideshow to display the slideshow by reproducing the recording medium 30 as a DVD-Video disk.

Further, at least a part of the asset directory 300, the asset roll directory 310, the plurality of original images 312, the asset manifest file 314, the display image directories (316a and 316b; hereinafter, referred to 316), the plurality of display images 318, the shared director 320, the plurality of shared files 322, the shared manifest files 324, the album directory 330, and the plurality of album manifest files 332 shown in the present figure may be varied according to the format of the recording medium 30 predetermined by, for example, the user. Here, the format of the recording medium 30 may be, for example, Fujicolor® CD, Picture CD®, and HotAlbum®.

The asset roll directory 310 may have a directory name distinguishing each of the asset roll directories 310 of each of a plurality of recording mediums 30. Similarly, at least a part of the plurality of original images 312, the asset manifest file 314, the display image directory 316, the plurality of display images 318, the shared directory 320, the plurality of shared files 322, the shared manifest file 324, the album directory 330, and the plurality of album manifest files 332 may also have a name distinguishing each of the files and the directories of each of a plurality of recording mediums 30.

Fig. 3 is a block diagram showing an example of a function configuration of the image recording apparatus 20 according to the present embodiment. The image recording apparatus 20 includes an image inputting unit 200, an apparatus identifier acquiring unit 205, a date and/or time acquiring unit 210, an asset roll directory making unit 215, a display image generating unit 220, a display image directory making unit 225, an asset manifest generating unit 230, an asset recording unit 235, a display image recording unit 240, an album directory making unit 245, an album manifest generating unit 250, an album manifest recording unit 255, an index generating unit 260, and an index recording unit 265.

The image inputting unit 200 inputs the plurality of original images taken. For example, the image inputting unit 200 may input the plurality of original images 312 by performing data communication with the digital camera which takes the plurality of original images 312 or by retrieving the plurality of original images 312 from another recording medium and memory apparatus on which the plurality of original images 312 are recorded. Then, the image inputting unit 200 outputs the plurality of original images which are input to the display image generating unit 220, the asset manifest generating unit 230, and the asset recording unit 235.

The apparatus identifier acquiring unit 205 acquires an identifier which can identify the image recording apparatus 20. Here, the apparatus identifier may be, for example, a MAC (Media Access Control) address allocated to a network interface of the image recording apparatus 20. Further, the apparatus identifier acquiring unit 205 outputs the acquired apparatus identifier to the asset roll directory making unit 215. The date and/or time acquiring unit 210 acquires the present time by using a clock function and a calendar function of the image recording apparatus 20. The date and/or time acquiring unit 210 outputs the acquired present time to the asset roll directory making unit 215.

The asset roll directory making unit 215 makes the asset roll directory 310 storing the plurality of original images input by the image inputting unit 200 in the recording medium 30. Here, the asset roll directory making unit 215 may make the asset roll directory 310 to have a directory name distinguishing each of the asset roll directories 310 of each of a plurality of recording mediums. Specifically, the asset roll directory making unit 215 may determine a directory name different for each apparatus identifier on the basis of the apparatus identifier received from the apparatus identifier acquiring unit 205. Further, on the basis of the date and/or time at which the asset roll directory 310 is generated received from the date and/or time acquiring unit 210, the asset roll directory making unit 215 may determine

the directory name different for each date and/or time. Further, the asset directory 300 storing the asset roll directory 310 is determined for the asset roll directory making unit 215 according to the predetermined format of the recording medium 30. In case the asset directory does not exist in the recording medium 30, it is possible to make the asset roll directory 310 after making the asset directory 300. Then, the asset roll directory making unit 215 outputs a path to the asset roll directory 310 which is made for the recording medium 30 to the display image directory making unit 225 and the asset recording unit 235.

The display image generating unit 220 generates the plurality of display images 318 by decreasing the resolution of the plurality of original images 312 input by the image inputting unit 200. Here, for each of the plurality of display images 318, the display image generating unit 220 may generate a file name of the display image 318 by transforming the file name of the original image 312 used when the display image 318 is generated by a predetermined rule which is inverse-transformable. Specifically, for each of the plurality of display images 318, the display image generating unit 220 may generate the file name of the display image 318 by changing a leading character string of a predetermined length of the file name of the original image 312 used when the display image 318 is generated to a different character string. Here, the file name of each of the original images 312 may be a file name determined by the image inputting unit 200 while the original image 312 is input. Then, the display image generating unit 220 outputs the plurality of display images 318 to the display image recording unit 240. Further, the display image generating unit 220 outputs the file name of each of the plurality of the display images 318 to the asset manifest generating unit 230.

The display image directory making unit 225 makes the display image directory 316 storing the plurality of display image 318 generated by the display image generating unit 220 in a lower level of the asset roll directory 310 made by the

asset roll directory making unit 215. Then, the display image directory making unit 225 outputs a path to the display image directory 316 to the display image recording unit 240. Further, the display image directory making unit 225 outputs the path to the display image directory 316 and the path to the asset roll directory 310 to the asset manifest generating unit 230.

The asset manifest generating unit 230 generates the asset manifest file 314 storing the path to each of the plurality of original images 312 in case the plurality of original images 312 input by the image inputting unit 200 are recorded on the recording medium 30 and the path to each of the plurality of display images 318 in case the plurality of display images 318 generated by the display image generating unit 220 are recorded on the recording medium 30. Here, the asset manifest generating unit 230 may detect the path to each of the plurality of original images 312 and the path to each of the plurality of display images 318 on the basis of a predetermined positional relationship between the asset manifest file 314 and the asset roll directory 310, for example, that the asset manifest file 314 is stored right under the asset roll directory 310. Then, the asset manifest generating unit 230 may detect the path to each of the plurality of original images 312 on the basis of the file name of each of the plurality of original images 312 input from the image inputting unit 200 and a predetermined positional relationship between the plurality of original images 312 and the asset roll directory 310, for example, that the plurality of original images 312 is stored right under the asset roll directory 310. Further, the asset manifest generating unit 230 may detect the path to each of the plurality of display images 318 on the basis of the file name of each of the plurality of display images 318 received from the display image generating unit 220, the path to the display image directory 316 and the path to the asset roll directory 310 received from the display image directory making unit 225. Then, the asset manifest generating unit 230 outputs the generated asset manifest file 314 to the asset recording unit 235.

The asset recording unit 235 records the plurality of original images 312 received from the image inputting unit 200 and the plurality of asset manifest file 314 received from the asset manifest generating unit 230 on the recording medium 30 so as to be recorded in the asset roll directory 310 made by the asset roll directory making unit 215. Then, the asset recording unit 235 outputs the path to the recorded asset manifest file 314 and the image identifier for identifying each of the plurality of original images 312 recorded to the album generating manifest generating unit 250. Further, the asset recording unit 235 outputs the path to the recorded asset manifest file 314 to the index generating unit 260. The display image recording unit 240 records the plurality of display images 318 generated by the display image generating unit 220 on the recording medium so as to be recorded in the display image directory 316 made by the display image directory making unit 225.

The album directory making unit 245 makes the album directory 330 storing the album manifest file 332 in a position which is not a lower level of the asset roll directory 310 made by the asset roll directory making unit 215. For example, the album directory making unit 245 may make the album directory 330 to be stored in the root directory of the recording medium 30. Then, the album directory making unit 245 outputs a path to the made album directory 330 to the album manifest recording unit 255.

The album manifest generating unit 250 generates the album manifest file 332 storing the path to the asset manifest file 314 recorded on the recording medium 30 and a displaying order in case the plurality of original images 312 recorded on the recording medium 30 are displayed. Specifically, the album manifest generating unit 250 may store the image identifier for identifying the original image 312 in the album manifest file 332 correspondingly to the displaying order. Then, the album manifest generating unit 250 outputs the generated album manifest file 332 to the album manifest recording unit 255. The album manifest recording unit 255 records the album manifest file 332

generated by the album manifest generating unit 250 on the recording medium 30 to be stored in the album directory 330 made by the album directory making unit 245. Then, the album manifest recording unit 255 outputs the path to the recorded album manifest file 332 to the index generating unit 260.

The index generating unit 260 generates the index manifest file 340 storing the path to the asset manifest file 314 recorded on the recoding medium 30 by the asset recording unit 235 and the path to the album manifest file 332 recorded on the recording medium 30 by the album manifest recording unit 255. Then, the index generating unit 260 outputs the generated index manifest file 340 to the index recording unit 265. The index recording unit 265 records the index manifest file 340 generated by the index generating unit 260 on a predetermined path which is not varied according to the recording medium 30.

According to the image recording apparatus 20 of the present embodiment, it is possible to set the directory name different for each of the plurality of recording mediums to the directory name of the asset roll directory 310. Thus, in case of copying the asset roll directory 310 recorded on the recording medium 30 to another recording medium and memory apparatus, it is possible to prevent the asset roll directory 310 previously stored in said another recording medium and memory apparatus from being overwrote. Accordingly, it is possible to prevent a file stored in said another recording medium and memory apparatus from being removed without intention.

Further, it is possible to exactly prevent the directory name of the asset roll directory 310 from being duplicated for a recording medium 30 recorded by different image recording apparatus 20 by determining the name of the directory name of the asset roll directory 310 on the basis of the apparatus identifier such as the MAC address. Further, it is possible to exactly prevent the directory name of the asset roll directory 310 from being duplicated for a plurality of recording mediums 30 recorded by the same image recording apparatus 20 by determining the directory name of the asset roll directory 310 on the basis

of the date and/or time at which the asset roll directory 310 is made.

Further, the asset roll directory 310 is copied to another recording medium by making the display image directory 316 in a lower level of the asset roll directory 310. Thus, it is possible to copy the original image 312 stored in the asset roll directory 310 and the display image 318 generated from the original image 312 collectively. Thus, it becomes easy to manage image data recorded on the recording medium 30.

Further, by transforming the file name of the original image by a rule which is inverse-transformable to generate the file name of the display image 318, it is possible to detect a corresponding relationship between the original image 312 and the display image 318 even in case the asset manifest file 314 is lost, for example. In addition, it is possible detect a corresponding relationship between the original image 312 and the display image 318 with a simple configuration and a short time by changing the leading character string of the file name of the original image 312 to another character string to generate the file name of the display image 312.

Fig. 4 is a block diagram showing an example of a function configuration of the image retrieving apparatus 40 according to the present embodiment. The image retrieving apparatus 40 of the present embodiment includes an index retrieving unit 400, an album manifest retrieving unit 410, an asset manifest retrieving unit 420, an image retrieving unit 430, and an image display unit 440. The image retrieving apparatus 40 of the present example displays a slideshow based on the plurality of original images 312 recorded on the recording medium 30 according to the album manifest file 332 recorded on the recording medium 30.

The index retrieving unit 400 retrieves the index manifest file 340 from the recording medium 30. Here, the index retrieving unit 400 is not varied according the recording medium 30 and may retrieve the index manifest file 340 by using a predetermined path. Then, the index retrieving unit 400 outputs the retrieved

index manifest file 340 to the album manifest retrieving unit 410. The album manifest retrieving unit 410 retrieves the album manifest file 332 from the recording medium 30 by using the path to the album manifest file 332 which is stored in the index manifest file 340 retrieved by the index retrieving unit 400. Then, the album manifest retrieving unit 410 outputs the retrieved album manifest file 332 to the asset manifest retrieving unit 420. The asset manifest retrieving unit 420 retrieves the asset manifest file 314 from the recording medium 30 by using the path to the asset manifest file 314 which is stored in the album manifest file 332 retrieved by the album manifest retrieving unit 410. Then, the asset manifest retrieving unit 420 outputs the retrieved asset manifest file 314 to the image retrieving unit 430.

The image retrieving unit 430 retrieves at least a part of the plurality of original images 312 from the recording medium 30 by using the path to each of the plurality of original images 312 which is stored in the asset manifest file 314 retrieved by the asset manifest retrieving unit 420. Further, the image retrieving unit 430 may retrieve at least a part of the plurality of display images 318 from the recording medium 30 by using the path to each of the plurality of display images 318 which is stored in the asset manifest file 314, instead of retrieving the original image 312. Specifically, the image retrieving unit 430 retrieves the display image 318 in case the path to the display image generated from the original image is stored in the asset manifest file sequentially or retrieves the original image 312 in case the path to the display image 318 generated from the original image 312 is not stored in the asset manifest file, for each of the original images 312 which should be displayed according to the displaying order determined by the album manifest file 332 retrieved by the album manifest retrieving unit 410. Then, the image display unit 440 displays the original image 312 or the display image 318 retrieved by the image retrieving unit 430.

According to the image retrieving apparatus 40 of the present embodiment, since the path to the index manifest file

340 in which the path to the asset manifest file 314 is stored is determined regardless of the format of the recording medium, it is possible to accurately retrieve the asset manifest file 314 even in case the path to the asset manifest file 314 is varied according to the format of the recording medium. Thus, it is possible to accurately retrieve each of the plurality of original images 312 on the basis of the retrieved asset manifest file 314 even in case a region on which the plurality of original images 312 are recorded, that is, the path to each of the original images is different for each recording medium.

Further, in case the resolution of the image display unit 440 is lower than that of the original image 312, a large part of the information of the original image 312 is not displayed and the time taken to retrieve the data and memory are wasted. However, according to the image retrieving apparatus 40 of the present embodiment, since the display image 318 of which resolution is lower that that of the original image 312 is previously recorded on the recording medium 30, it is possible to perform image retrieval and display efficiently and at high speed by retrieving and displaying the display image 318 corresponding to the original image 312 instead of the original image 312. Further, since the path to the display image 318 is stored in the asset manifest file 314, it is possible to accurately retrieve the display image 318 even in case the path to the display image 318 is varied according to the format of the recording medium 30.

Further, since the path to the album manifest file 332 is stored in the index manifest file 340, it is possible to accurately retrieve the original image 312 and the display image 318 even in case the path to the album manifest file 332 is varied according to the format of the recording medium 30.

Furthermore, the image retrieving apparatus 40 may display the original image 312 or the display image 318 regardless of the album manifest file 332. In this case, the image retrieving apparatus 40 may not include the album manifest retrieving unit 410 and the asset manifest retrieving unit 420 may retrieve the

asset manifest file 314 by using the path to the asset manifest file 314 stored in the index manifest file 340 instead of the album manifest file 332.

In addition, the image retrieving apparatus 40 may not include the image display unit 440. In this case, the image retrieving apparatus 40 may provide the user with the original image 312 by, for example, printing the original image 312 retrieved by the image retrieving unit 430. Further, the image retrieving apparatus 40 may output the original image 312 or the display image 318 retrieved by the image retrieving unit 430 to a display apparatus of the outside and display the image by the display apparatus, for example.

Fig. 5 is a flowchart showing an example of a flow of process by an image recording method using the image recording apparatus 20 according to the present embodiment. The image inputting unit 200 inputs the plurality of original images taken 312 (S1000). The asset roll directory making unit 215 makes the asset roll directory 310 in which the plurality of original images input 312 are stored in the recording medium 30 as a directory name for distinguishing the asset roll directory 310 of each of a plurality of recording mediums (S1010). The display image directory making unit 225 makes the display image directory 316 in which the plurality of display images 318 are stored in a lower level of the made asset roll directory 310 (S1020). The display image generating unit 220 generates the plurality of display images 318 by decreasing resolution of the plurality of original images input 312 (S1030).

Then, the asset manifest generating unit 230 generates the asset manifest file 314 which stores the path to each of the plurality of original images 312 in case the plurality of original images input 312 are recorded on the recording medium 30 and the path to each of the plurality of original images 312 in case the plurality of display images generated 318 are recorded on the recording medium 30 (S1040). The asset recording unit 235 records the plurality of original images input 312 and the generated asset manifest file 314 on the recording medium so

as to be stored in the made asset roll directory 310 (S1050). The display image recording unit 240 records the plurality of display image generated 318 on the recording medium 30 so as to be stored in the made display image directory 316 (S1060).

Then, the album directory making unit 245 makes the album directory 330 in which the album manifest file 332 is stored in a position which is not a lower level of the made asset roll directory 310 (S1070). The album manifest generating unit 250 generates the album manifest file 332 which stores the path to the asset manifest file 314 recorded on the recording medium 30 and the displaying order of the plurality of original images 312 recorded on the recording medium 30 (S1080). The album manifest recording unit 255 records the generated album manifest file 332 on the recording medium 30 so as to be stored in the made album directory 330 (S1090).

Then, the index generating unit 260 generates the index manifest file 340 which stores the path to the asset manifest file 314 recorded on the recording medium 30 and the path to the album manifest file 332 recorded on the recording medium 30 (S1100). The index recording unit 265 records the generated index manifest file 340 on a predetermined path which is not different foe each recording medium 30 (S1110).

According to the image recording apparatus 20 of the present embodiment, it is possible to make the album directory 330 in a position which is not a lower level of the asset roll directory 310. Thus, in case of using the album manifest file 332 determining a displaying order of images over a plurality of asset roll directories 310, it is not necessary to move the album manifest file 332 even if the asset roll directory 310 is deleted from the recording medium 30.

Fig. 6 is a flowchart showing an example of a flow of process by an image retrieving method using the image retrieving apparatus 40 according to the present embodiment. The index retrieving unit 400 retrieves the index manifest file 340 from the recording medium 30 (S1200). The album manifest retrieving unit 410 retrieves the album manifest file 332 from the recording

medium 30 by using the path to the album manifest file 332 stored in the retrieved index manifest file 340 (S1210). The asset manifest retrieving unit 420 retrieves the asset manifest file 314 from the recording medium 30 by using the path to the asset manifest file 314 stored in the retrieved album manifest file 332 (S1220).

Then, the image retrieving apparatus 40 repeats the following processes for the original image(s) 312 which are determined to be displayed by the album manifest file 332 (S1230). The image retrieving unit 430 determines whether or not the path to the display image 318 generated from the original image 312 is stored in the asset manifest file 314 (S1240). For example, the image retrieving unit 430 determines whether or not the path to the display image 318 corresponding to the image identifier for identifying the original image 312 is stored in the asset manifest file 314. In case the path to the display image 318 is stored in the asset manifest file 314 (S1240: Yes), the image retrieving unit 430 retrieves the display image 318 by using the path to the display image 318 (S1250).

On the other hand, in case the path to the display image 318 is not stored in the asset manifest file 314 (S1240: No), the image retrieving unit 430 retrieves the original image 312 by using the path to the original image 318 stored in the asset manifest file 314 (S1260). Then, the image retrieving unit 430 decreases the resolution of the retrieved original image 312 according to the resolution of the image display unit 440 (S1270).

Then, the image display unit 440 displays the retrieved display image 318 or the original image 312 which is retrieved and of which resolution is decreased (S1280). Here, in case the user instructs to print the displayed image by using an input means provided in the image retrieving apparatus 40, the image retrieving apparatus 40 may retrieve the original image 312 from the recording medium 30 and outputs it to a printing means of the image retrieving apparatus 40 or a printing apparatus of the outside. Then, the image retrieving apparatus 40 repeats

the above processes for all images which should be displayed (S1290).

Fig. 7 is a flowchart showing another example of the flow of process by the image recording method using the image recording apparatus 20 according to the present embodiment. In the present example, the image recording apparatus 20 records a plurality of new original images 312 and a new album manifest file 332 on the recording medium 30 on which the plurality of original images 312 and the album manifest file 332 are previously recorded. Further, in the present example, the recording medium 30 is a write-once type recording medium a region of which information can be recorded on only one time and information can be recoded on a region of the write-once type recording medium on which information is not recorded yet. Further, the image recording apparatus 20 of the present example includes the image retrieving apparatus 40 shown in Fig. 4 and can retrieve in formation such as a manifest recorded on the recording medium 30.

The image inputting unit 200 inputs a plurality of new original images 312 (S1400). The index retrieving unit 400 retrieves the index manifest file 340 previously recorded from the recording medium 30 (S1410). The album manifest retrieving unit 410 retrieves the album manifest file 332 previously recorded from the recording medium 30 by using the path to the album manifest file 332 stored in the retrieved index manifest file 340 (S1420). The asset roll directory making unit 215 makes a new asset roll directory 310 storing the plurality of new original images input 312 in the recording medium 30 to have a directory name distinguishing each of the asset roll directories 310 of each of a plurality of recording mediums (S1430). The display image directory making unit 225 makes a new display image directory storing a plurality of display images in a lower level of the made new asset roll directory 310 (S1440). The display image generating unit 220 generates the plurality of new display images 318 by decreasing resolution of the plurality of original images input 312 (S1450).

The asset manifest generating unit 230 generates a new asset manifest file 314 which stores a path to each of the plurality of new original images 312 in case the plurality of new original images input 312 are recorded on the recording medium 30 and a path to each of the plurality of new display images 318 in case the plurality of new display images generated 318 are recorded on the recording medium 30. The asset recording unit 235 records the plurality of new original images 312 and the new asset manifest file generated 314 on a region of the recording medium on which information is not recorded yet so as to be stored in the new asset roll directory made 310 (S1470). The display image recording unit 240 records the plurality of new display images generated 318 on a region of the recording medium on which information is not recorded yet so as to be stored in the new display image directory made 316 (S1480).

The album manifest generating unit 250 generates a new album manifest file 332 by storing further a path to the new asset manifest file made 314 and a displaying order in case the plurality of new original images input 312 are displayed in the album manifest file 332 previously recorded on the recording medium 30 (S1490). The album manifest recording unit 255 nullifies the album manifest file 332 recorded on the recording medium 30 (S1500). The album manifest recording unit 255 records the new album manifest file generated 332 on a region of the recording medium on which information is not recorded yet (S1510). For example, the album manifest recording unit 255 may record the new album manifest file 332 on the recording medium 30 with the same path as the album manifest file 332 previously recorded. Further, the album manifest recording unit 255 may record file management information that a physical region of the recording medium corresponding to the path to the album manifest file 332 is changed from a physical region of the album manifest file 332 previously recorded to a physical region of the new album manifest file 332, on the recording medium 30.

In case the new original image 312 is additionally recorded on the write-once type recording medium on which the original

image 312 is previously recorded, if a slideshow is recorded as a video stream, it is needed to generate the video stream once again and record it. Since a data amount of a video stream is large than that of a still picture generally, the generated video stream cannot be recorded on the recording medium on which a video stream is already recorded and thus sometimes it should be recorded on a new recording medium. However, according to the image recording apparatus 20 of the present embodiment, it is possible to make the recording medium for displaying a slideshow to which the new original image 312 is added by only recording the new original image 312 and simultaneously renewing the new album manifest file 332. Thus, it is possible to use the recording area of the recording medium 30 efficiently. Further, since the process of recording the plurality of original images 312 and renewing the album manifest file 332 can be performed in a short time in comparison with a process of generating and recording a video stream, it is possible to improve convenience of the user in case of adding a plurality of new original images by using the image recording apparatus 20 of the present embodiment.

Fig. 8 shows an example of the configuration of an image using system 50 which is another example of the image using system according to the present embodiment of the present invention. The image using system 50 of the present embodiment records a plurality of original images 312 recorded on a first recording medium 60 on a second recording medium 80. The image using system 50 of the present embodiment includes the first recording medium 60, an image recording apparatus 70, and the second recording medium 80. Further, the each of the first and second recording medium 60 and 80 may include a directory construction and a file construction which are substantially the same as those of the recording medium 30 shown in Fig. 2.

The recording apparatus 70 of the present embodiment includes a first index retrieving unit 700, a first asset directory detecting unit 705, an asset manifest retrieving unit 710, an image retrieving unit 715, a second index retrieving unit 720,

a second asset directory detecting unit 725, an asset directory making unit 730, an asset roll directory making unit 735, an asset recording unit 740, an index generating unit 745, and an index recording unit 750.

The first index retrieving unit 700 retrieves the index manifest file 340 from the first recording medium 60. Here, the first index retrieving unit 700 is not different for each first recording medium 60 and may retrieve the index manifest file 340 by using a predetermined path. Then, the first index retrieving unit 700 outputs the retrieved index manifest file 340 to the first asset directory detecting unit 705 and the asset manifest retrieving unit 710.

The first asset directory detecting unit 705 detects a directory name of the asset directory 300 including the asset roll directory 310 stored in the first recording medium 60 on the basis of a path to the asset manifest file 314 stored in the index manifest file 340 retrieved by the first index retrieving unit 700. Here, the first asset directory detecting unit 705 may detect that the asset directory 300 does not exist in case the first recording medium 60 does not include the asset roll directory 300 and includes the asset roll directory 310 right under the root directory. The first asset directory detecting unit 705 outputs the path to the asset manifest file 314 of the first recording medium 60 and the detected directory name of the asset directory 300 to the asset directory making unit 730, the asset roll directory making unit 735, and the asset recording unit 740.

The asset manifest retrieving unit 710 retrieves the asset manifest file 314 from the first recording medium 60 by using the path to the asset manifest file 314 stored in the index manifest file 340 retrieved by the first index retrieving unit 700. Then, the asset manifest retrieving unit 710 outputs the retrieved asset manifest file 314 to the image retrieving unit 715 and the asset recording unit 740. The image retrieving unit 715 retrieves the plurality of original images 312 from the first recording medium 60 by using a path to each of the plurality

of original images 312 stored in the asset manifest file 314 retrieved by the asset manifest retrieving unit 710. Then, the image retrieving unit 715 outputs the plurality of original images retrieved 312 to the asset recording unit 740.

The second index retrieving unit 720 retrieves the index manifest file 340 from the second recording medium 80. Here, the second index retrieving unit 720 is not different for each second recording medium 80 and may retrieve the index manifest file 340 by using a predetermined path. Then, the second index retrieving unit 720 outputs the retrieved index manifest file 340 to the second asset directory detecting unit 725 and the index generating unit 745.

The second asset directory detecting unit 725 detects a directory name of the asset directory 300 including the asset roll directory 310 stored in the second recording medium 80 on the basis of a path to the asset manifest file 314 stored in the index manifest file 340 retrieved by the second index retrieving unit 720. Here, the second asset directory detecting unit 725 may detect that the asset directory 300 does not exist in case the second recording medium 80 does not include the asset roll directory 300 and includes the asset roll directory 310 right under the root directory. The second asset directory detecting unit 725 outputs the detected directory name of the asset directory 300 to the asset directory making unit 730, the asset roll directory making unit 735, and the asset recording unit 740.

The asset directory making unit 730 makes the asset directory 300 of a predetermined name in the second recording medium 80 in case the directory names of the asset directory 300 detected by the first and second asset directory detecting units 705 and 725 are not the same. Then, the asset directory making unit 730 outputs a path to the made asset directory 300 to the asset roll directory making unit 735.

The asset roll directory making unit 735 makes the asset manifest file 314 retrieved by the asset manifest retrieving unit 710 and the asset roll directory 310 which should store

the plurality of original images 312 retrieved by the image retrieving unit 715 in the second recording medium 80. Specifically, the asset roll directory making unit 735 makes the asset roll directory 310 in a lower level of the asset directory 300 of the second recording medium 80 in case the directory names of the asset directory 300 detected by the first and second asset directory detecting units 705 and 725 are the same. Further, the asset roll directory making unit 735 makes the asset roll directory 310 in a lower level of the asset directory 300 made by the asset directory making unit 730 of the second recording medium 80 in case the directory names of the asset directory 300 detected by the first and second asset directory detecting units 705 and 725 are not the same. In addition, the asset roll directory making unit 735 may determine a directory name of the asset roll directory 310 to be made on the basis of the path to the asset manifest file 314 of the first recording medium 60 received from the first asset directory detecting unit 710 so that the asset manifest file 314 have the same directory name as that of the asset roll directory 310 stored in the first recording medium 60. Then, the asset roll directory making unit 735 outputs the path to the made asset roll directory 310 to the asset recording unit 740.

The asset recording unit 740 records the asset manifest file 314 recorded on the first recording medium 60 retrieved by the asset manifest retrieving unit 710 and the plurality of original image 312 recorded on the first recording medium 60 retrieved by the image retrieving unit 715 on the second recording medium 80 so as to be stored in the asset roll directory 310 made by the asset roll directory making unit 735. The asset recording unit 740 outputs the path to the recorded asset manifest file 314.

The index generating unit 745 generates a new index manifest file 340 by storing further the path to the asset manifest file 314 recorded by the asset recording unit 740 on the second recording medium 80 in the index manifest file 340 which is previously recorded on the second recording medium and retrieved

by the second index retrieving unit 720. Then, the index generating unit 745 outputs the new index manifest file generated 340 to the index recording unit 750.

The index recording unit 750 renews the index manifest file 340 which is previously recorded on the second recording medium 80 by using the new index manifest file 340 generated by the index generating unit 745. For example, in case the second recording medium 80 is a write-once type, the index recording unit 750 may nullify the index manifest file 340 previously recorded and record the new index manifest file 340 on a region on which information is not recorded yet.

According to the image recording apparatus 70 of the present embodiment, it is possible to record the plurality of original images 312 recorded on the first recording medium 60, which is a recording medium other than the second recording medium 80, additionally on the second recording medium 80 on which the original image 312 is previously recorded. Further, according to the image recording apparatus 70, in case each recording medium is based on the same format, it is possible to record the plurality of original images 312 and the asset manifest file 314 of the first recording medium 60 without changing the path to the plurality of original images 312 and the asset manifest file 314 of the first recording medium 60. Further, according to the image recording apparatus 70, in case each recording medium is based on a different format from each other, it is possible to make the asset directory 300 of a predetermined directory name and record the plurality of original images 312 and the asset manifest file 314 on the second recording medium 80. Therefore, according to the recording apparatus 70, it is possible to copy the original image 312 from the first recording medium 60 to the second recording medium 80 and vice versa regardless of the format of the first and second recording mediums 60 and 80.

The image recording apparatus 70 shown in the present figure records the plurality of original images 312 and the asset manifest file 314 recorded on the first recording medium on the

second recording medium 80. In addition, the image recording apparatus 70 may further record the album manifest file 332 recorded on the first recording medium 60 on the second recording medium 80. In this case, the recording apparatus 70 may renew the album manifest file 332 so that the path to the asset manifest file 314 and the displaying order of the plurality of original images 312 recorded by the asset recording unit 740 are further stored in the album manifest file 332 previously recorded on the second recording medium 80. Instead, the recording apparatus 70 may record a new album manifest file 332 storing the path to the asset manifest file 314 and the displaying order of the plurality of original images 312 recorded by the asset recording unit 740 independently from the album manifest file 332 previously recorded on the second recording medium 80.

Fig. 9 is a flowchart showing an example of a flow of process by the image recording method using the image recording apparatus 70 according to the present embodiment. The first index retrieving unit 700 retrieves the index manifest file 340 from the first recording medium 60 (S1600). The first asset directory detecting unit 705 detects the directory name of the asset directory 300 including the asset roll directory 310 stored in the first recording medium 60 on the basis of the path to the asset manifest file 314 stored in the index manifest file 340 retrieved by the first index retrieving unit 700 (S1610). The asset manifest retrieving unit 710 retrieves the asset manifest file 314 from the first recording medium 60 by using the path to the asset manifest file 314 stored in the index manifest file 340 retrieved by the first index retrieving unit 700 (S1620). The image retrieving unit 715 retrieves the plurality of original images 312 form the first recording medium 60 by using the path to each of the plurality of original images 312 stored in the asset manifest file 314 retrieved by the asset manifest retrieving unit 710 (S1630).

The second index retrieving unit 720 retrieves the index manifest file 340 from the second recording medium 80 (S1640). The second asset directory detecting unit 725 detects the

directory name of the asset directory 300 including the asset roll directory 310 stored in the second recording medium 80 on the basis of the path to the asset manifest file 314 stored in the index manifest file 340 retrieved by the second index retrieving unit 720 (S1650).

Then, the image recording apparatus 70 determines whether or not the directory names of the asset directory 300 detected by the first and second asset directory detecting units 705 and 725 are the same (S1660). In case the directory names of the asset directory 300 are not the same (S1660: No), the asset directory making unit 730 makes the asset directory 300 of a predetermined name in the second recording medium 80 (S1670).

Then, the asset roll directory making unit 735 makes the asset manifest file 314 retrieved by the asset manifest retrieving unit 710 and the asset roll directory 310 which should store the plurality of original images 312 retrieved by the image retrieving unit 715 in the second recording medium 80 (S1680). The asset recording unit 740 records the asset manifest file 314 which is recorded on the first recording medium 60 and retrieved by the asset manifest retrieving unit 710 and the plurality of original images 312 which are recorded on the first recording medium 60 and retrieved by the image retrieving unit 715 on the second recording medium 80 so as to be stored in the asset roll directory 310 made by the asset roll directory making unit 735 (S1690).

The index generating unit 745 generates a new index manifest file 340 by storing further the path to the asset manifest file 314 which is retrieved from the first recording medium 60 by the asset manifest retrieving unit 710 and recorded on the second recording medium 80 by the asset recording unit 740 in the index manifest file 340 which is previously recorded on the second recording medium 80 and retrieved by the second index retrieving unit 720 (S1700). The index recording unit 750 renews the index manifest file 340 previously recorded on the second recording medium 80 by using the new index manifest file 340 generated by the index generating unit 745 (S1710).

Appendix A-1, A-2 and A-3 give another example of the present embodiment.

Although the present invention has been described by way of exemplary embodiments, it should be understood that those skilled in the art might make many changes and substitutions without departing from the spirit and the scope of the present invention which is defined only by the appended claims.

INDUSTRIAL APPLICABILITY

As clear from the above description, according to the present invention, it is possible to retrieve an original image recorded on a recording medium regardless of the format of the recording medium.

**APPENDIX A-1**



FUJIFILM

KONICA MINOLTA

# PICTURE ARCHIVE AND SHARING SYSTEM

## A Joint Initiative

*Konica-Minolta, Fuji Film, Eastman Kodak*

*Version 0.82*

# Logical Disc Specification

*Working Draft*

Authors: Makato Hara, Y. Sato, Yutaka Ueda, T. Whitcher

Contributors: T. Arujunan, John McCoy

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# Revision History

| Version | Date | Author(s) | Description |
|---|---|---|---|
| 0.20 | 2/23/04 | Y Sato | Initial Draft |
| 0.30 | 9/12/04 | T. Arujunan, T. Whitcher | Revised Structure |
| 0.35 | 9/24/04 | T. Whitcher | Updated structure per agreement at September face-to-face |
| 0.49 | 10/26/04 | T. Whitcher | Updated per agreement at October face-to-face |
| 0.60 | 12/1/04 | T. Whitcher | Updated the Display directory description. |
| 0.75 | 01/12/05 | T. Whitcher | Updated the Recommended Directory Structure, Added Metadata Tables, Refined several descriptions. |
| 0.76 | 01/18/05 | T. Whitcher | Updated tables describing metadata. |
| 0.78 | 01/24/05 | T. Whitcher | Incorporated Changes at San Jose meeting |
| 0.80 | 01/24/05 | T. Whitcher | Incorporated Changes from San Jose meeting |
| 0.81 | 02/02/05 | T. Whitcher | Additional enhancements |
| 0.82 | 02/04/05 | T. Whitcher | Incorporated some changes from KM & FF feedback |

# 1 Overview

## *1.1 PASS System Overview*

There are the following major unified feature of PASS picked up (Fig.1):

*1) Easy playing on Consumer Electronics(CE)*

Easy playing photo slide show without stress by existing DVD players and PASS supported DVD players

*2) Easy print ordering on TV*

Check slide No. on TV and write down it on an ordering sheet.

Easy print ordering at shop will be done by bringing such ordering sheet and PASS Digi-Album.

*3) Easy print ordering on any Print Kiosks*

Available for print ordering from any PASS Digi-Album at any PASS supported Print Kiosks

*4) Easy photo retrieve*

Available for easy retrieve of images by date and any keywords

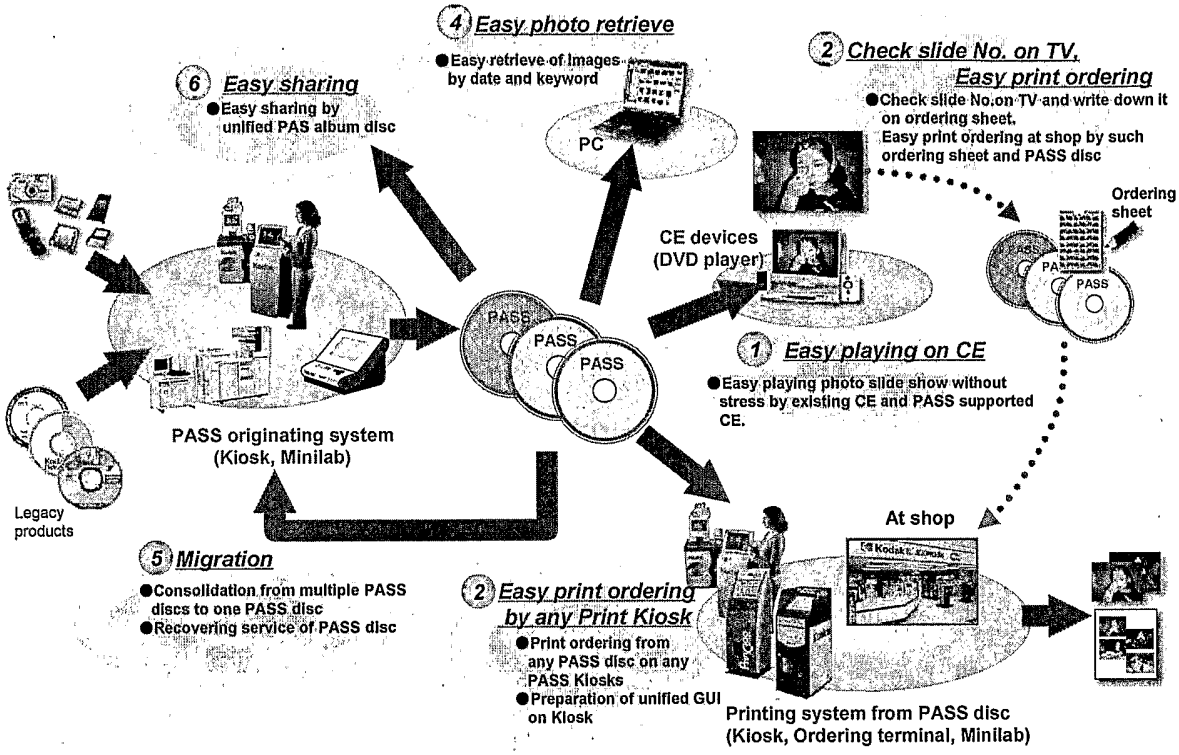
*5) Safe migration*

Available for consolidation from multiple PASS digi-Albums to one PASS digi-Album with migration of history of photo

*6) Easy sharing*

Available for easy image sharing by unified PASS digi-Albums.

**Fig.1. Unified PASS Features**




### 1.1.1 System Overview

The PASS system is made up of the following major systems and components;

*1) Originating system*

Originating system has the following functions mainly;

Check ASSET format to input from non PASS medium and created PASS digi-Album

Read & Interpret PASS MANIFEST files from created PASS digi-Album.

Create PASS_SDF.xml which is a profile information for Authoring SDK

To create PASS MANIFEST files and PASS directory structure

c) Create accelerator file which are reduced images from original still images

Create video segment as option which is used on existing DVD player.

Write to PASS discs

Originating system shall include Authoring SDK.

*2) Authoring SDK*

Authoring SDK in Originating system and has the following functions mainly;

a) Create PASS MANIFEST files according to PASS_SDF.xml created by originating component

b) Create directory structure according to PASS_SDF.xml

*3) Receiving system*

Receiving system has the following functions mainly;

a) Check ASSET format

Read and interpret PASS MANIFEST files

Receiving system shall include Playback component or Printing component.

*4) Playback component*

Playback component in Receiving system has the following functions mainly;

Display ASSETs according to PASS MANIFEST.

Select album from multiple PASS PLAYLIST MANIFEST

Display ASSETs retrieved by date and keywords as optional functions

*5) Printing component*

Printing component in Receiving component has the following functions mainly;

a) Select ASSETs for print

b) Print selected ASSETs

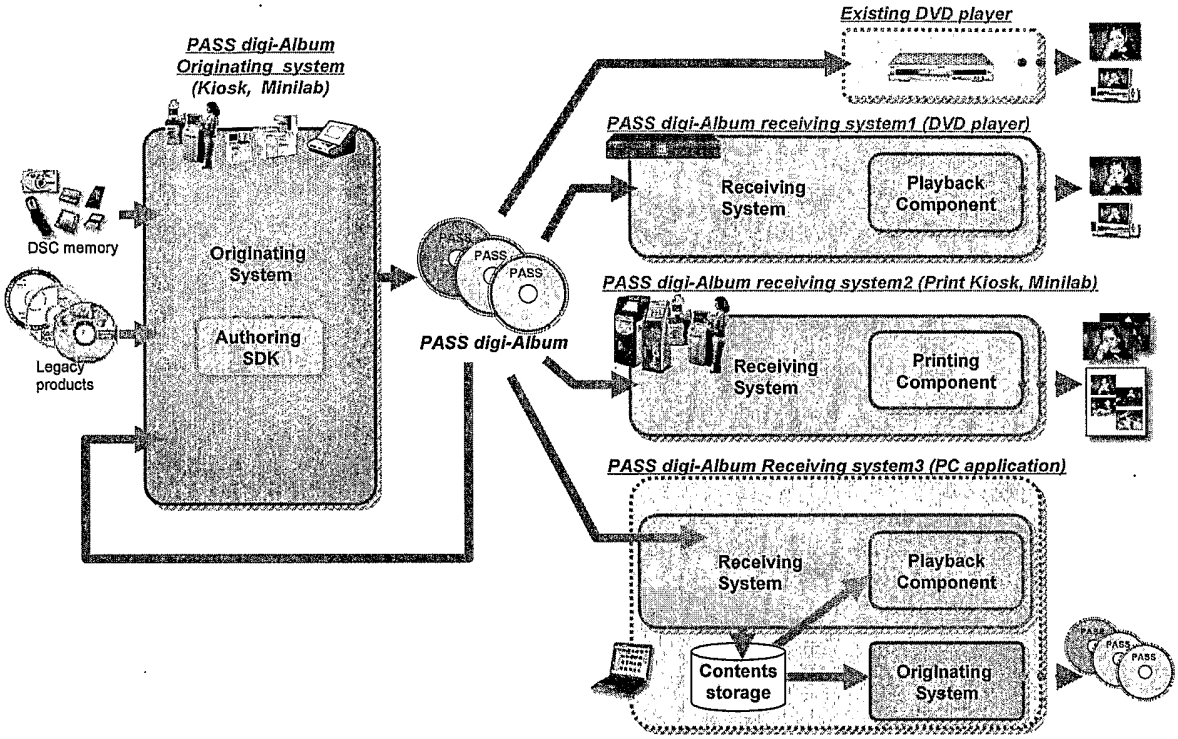
c) Create print ordering data and output to any memory cards as an option

d) Create print ordering data and send it online as optional function.

*6) Contents storage*

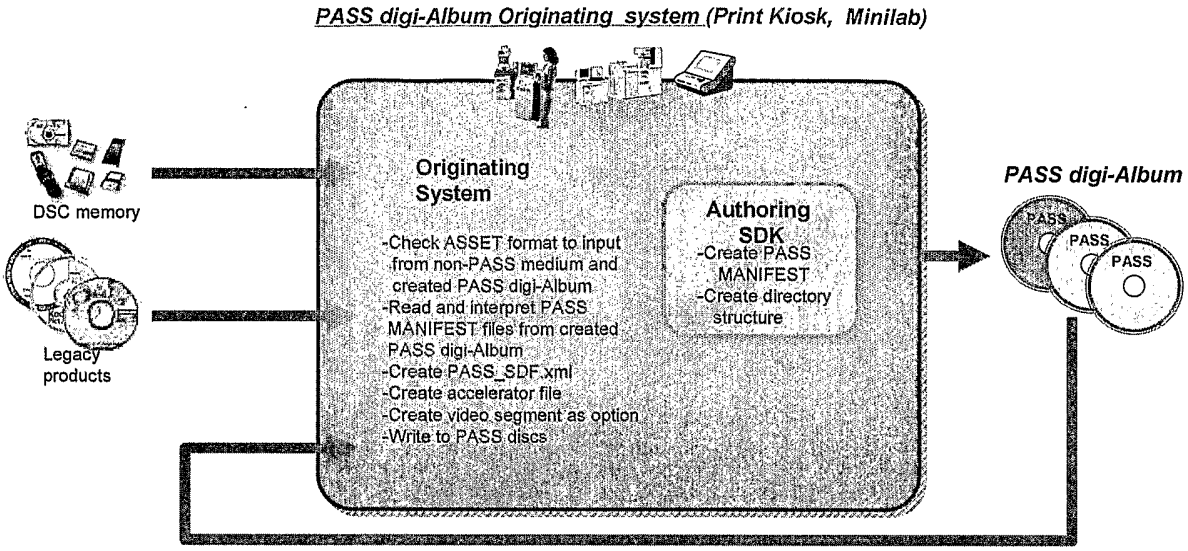
Provided to store ASSET files when creating PASS Digi-Albums.

***Structure of Originating, Authoring, Receiving, Playback and Print component***

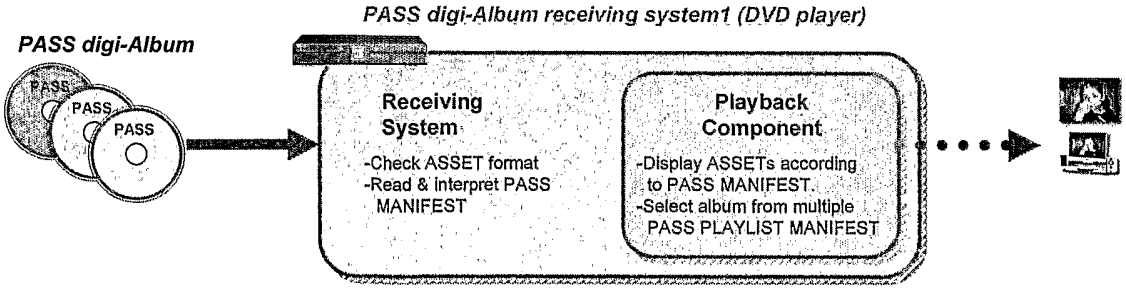


### 1.1.2 Example systems

**1) PASS digi-Album Originating system (Kiosk, Minilab)**

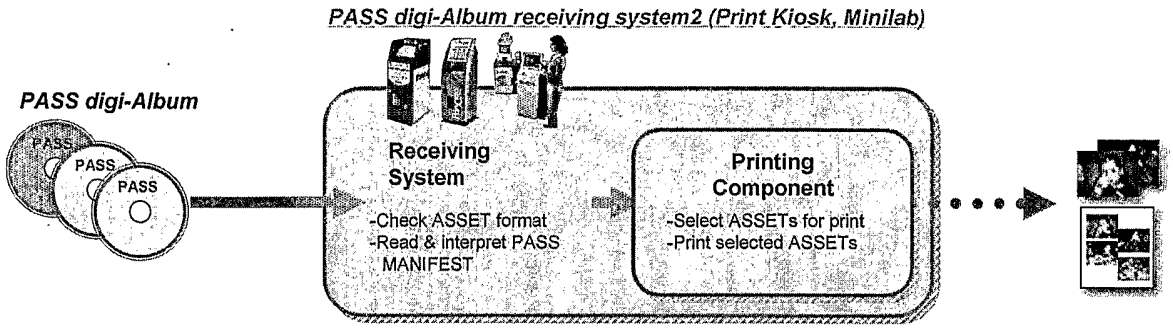



**2) PASS digi-Album Receiving system1 (DVD players)**

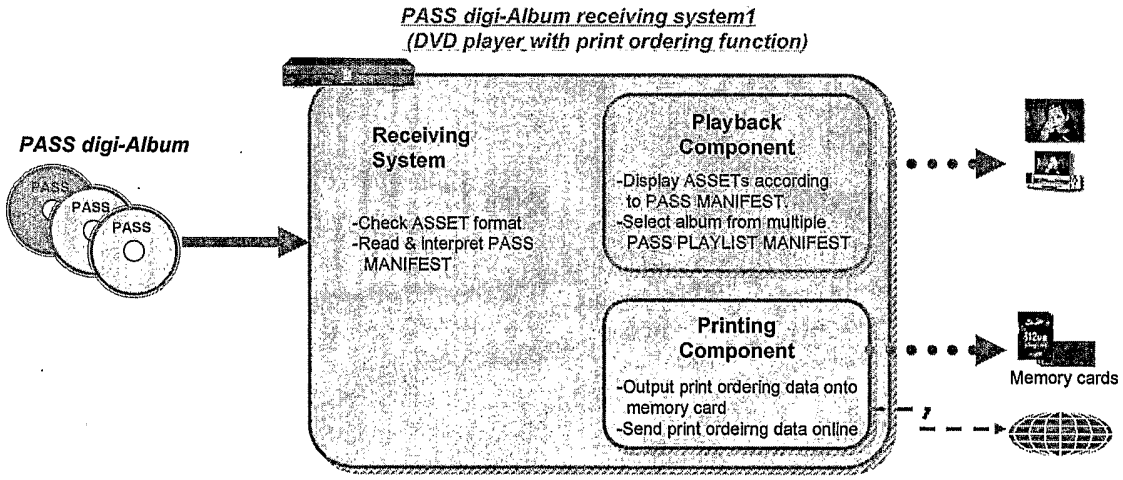


**3) PASS digi-Album Receiving system2 (DVD player with print ordering function)**

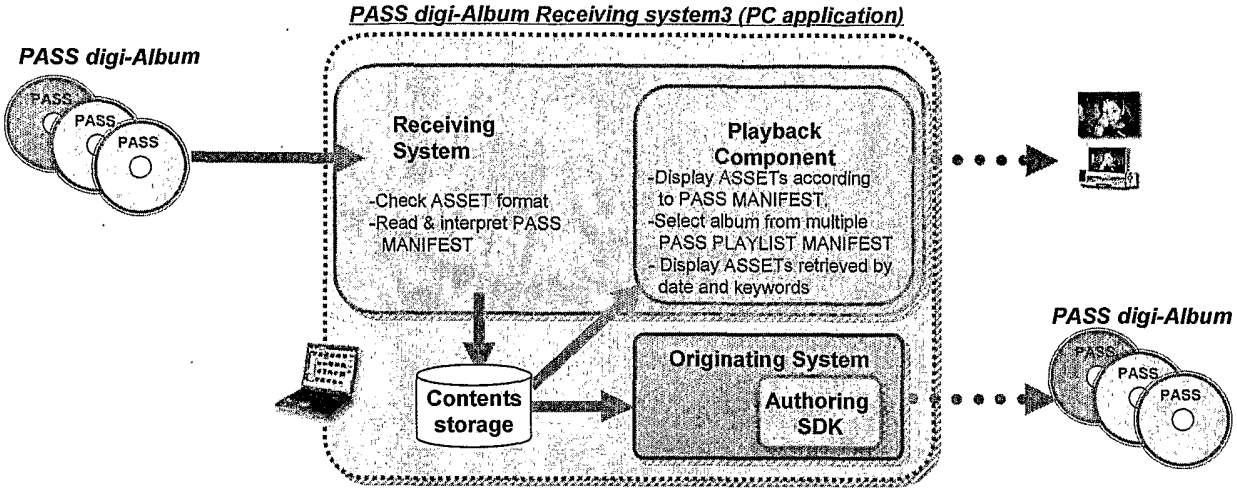
(TBD) Printing is outside PASS, pending final position by SC




*4) PASS Digi-Album Receiving system3 (Print Kiosks, Minilab)*



5)PASS Digi-Album Receiving system4 (PC application for PASS)




## *1.2 Overview of the Logical Disc Specification*

The Logical Disc Specification (LDS) describes the logical data structures that are recorded on a PASS Digi-Album, which could be any removable medium that supports a file structure. The LDS describes the folders (containers) used by a Digi-Album. It also describes which types of files can be recorded to Digi-Album and be properly understood by a PASS System. Such files are referred to as PASS asset files as users provide them. PASS uses special descriptor files (manifests) that are defined by the Music Photo Video Specifications of OSTA. These manifest files are XML encoded. Specific metadata that is associated with each asset file are encoded in the manifest.

The LDS specifically describes

1. PASS Asset File Formats
2. The PASS Index Manifests File and its associated metadata
3. PASS Albums (a.k.a. Playlists)
4. The PASS Asset List Manifest and its associated Metadata

# 2 Licensing and Logo Policy

This specification describes the logical data on a PASS storage medium. The details concerning the application of Logos and their certification criteria and the details of Trademark and Licensing are described in the *PASS Logo and Trademark Licensing Document.*

## 3 Definition of Terms

**album**
A collection of customer assets
**album directory**
A directory that is a child of Root that contains manifests for play back know as Play List Manifests.
**album manifest file**
Manifest file including album information
**asset**
Customer provided files. They may be photo, video, or audio.
**ASSET directory**
A directory that is a child of Root that contains Asset Roll directories, DCF folders, or asset files. The name is arbitrary.
**asset ID**
An identifier for a customer's asset . It is one of items of metadata associated with an asset. It is typically used for print order. Asset ID is defined as the lower 4 characters of the attribute mpv:id of each asset file in the Asset List Manifest which contains it. The asset ID along with the asset list ID is used to construct the Image ID.
**asset list**
Manifest component which identifies assets and handles asset related attributes and metadata.
**assetlist ID**
Identifier for Asset List, typically identify images for a print order. The asset list ID is defined as the lower 3 letters of the attribute mpv:id of <mpv:AssetList> in the corresponding AssetList Manifest. The asset list ID along with the asset ID is used to construct the Image ID.
**Asset List Manifest file**
A particular MPV manifest which contains location information and metadata associated with asset files. It is typically located in an Asset Roll directory.
**Asset Roll (AR) directory**
A directory that contains consumer provided assets, either digitally acquired or scanned from film. It corresponds to pictures of one roll of film in conventional photography. It may correspond to pictures taken by digital still camera on a removal of memory at a time. E.g.: DCF folder.
**authoring**
The process of creating a PASS Digi-Album from a customer's assets
~~**content store**~~
~~"The purpose of the Content Store is to provide a store for still, video, audio, and related assets that are used by Originating Systems in creating DigiAlbum. The server can be thought of a memory storage which can be local or remote. Assets can be collected from a number of sources such as: Digital camera memory cards, optical media, and scanners, analog to video digitization equipment, network connections, and DigiAlbum. The responsibilities are:~~
~~· Store digital content~~

**derived dataset**
A dataset algorithmically generated
**Digi-Album**
This is a generic name for a particular removable storage medium that contains the data structures described in this standard.
**display directory**
A directory contains adjusted photo images for screen display. Typically located in each Asset Roll directory
**display image file**
Low-resolution image files converted from the original for display. Display image files are located in display directories.
~~**history**~~
~~metadata associated with an asset that describes the asset's previous states~~
**Image ID**
This a value constructed by a receiving system that enables a user to select images. The Image ID has a prefix constructed the lower 3 characters of the mpv:id of an Asset List Manifest that contains the displayed assets and a suffix constructed from the lower 4 characters of the attribute mpv:id of each asset file.
**Index Manifest File**
A particular MPV manifest in the root directory file, which identifies Digi-Album metadata and other manifests on the Digi-Album. The name is "PASSIDX.PVM"
**inheritance metadata**
This is metadata that is typically in a the PASSIDX.PVM file and it is metadata that identifies specific attributes about Digi-Albums that where migrated to another Digi-Album.
**medium ID**
"Identifier for PASS Digi-Album medium, which is described in the PASS index manifest file"
**mediumLabel**
A user friendly volume label that is described in the PASSIDX.PVM file.
**migration**
Copying asset and metadata information from a set of PASS media to a new PASS medium for inheritance. The medium is written with the same or newer version of the PASS specifications.
~~**New creation**~~
~~Select asset from a set of PASS media and create new one.~~
**Originating System**
Originating systems is the system for creating PASS discs. It has the following functions typically;
a) Collect user's data on various media, and convert them to PASS compliant formats on PASS discs.
b) Collect or generate metadata (date, keyword,...) for user's images on PASS discs.
c) Create digital albums on PASS discs, as slideshows playable on CE devices.
d) Migrate multiple PASS discs to new one, over and over generations.
e) Create video segment as option, which is playable on existing DVD player.

~~**PASS compatible photo server**~~
~~"Device which can read and write a PASS medium, with its own memory device, keep metadata? Is this a instantiation of a Originating system"~~
**PASS disc**
Physical media that is recorded with the data structures described in the standard. A Digi-Album. A PASS disc or Digi-Album is certified to be compliant to this standard.
**PASS medium**
Physical media that is recorded with the data structures described in the standard. A Digi-Album. A PASS medium or Digi-Album is certified to be compliant to this standard.
**photographic industry**
Traditional photographic companies manufacturing silver halide related material and their processing equipment.
**playback component**
The Playback Component addresses the needs of system that are designed to play the presentation experience on the media. This would include DVD Players or Software DVD players on a PC. The responsibilities of the playback component include:
· Read and Play presentation layer of DigiAlbum
· Display Media ID
· Display asset meta-data
· Display Asset ID
· Play multiple Playlists
· Handle asset presentation commands (Ex. Rotate)
· Select assets for printing
**Play List Manifest File**
A particular MPV manifest located in the album directory that describes a particular collection of customer assets
**playlists**
a component in a playlist manifest that describes playback experience
~~**print component**~~
~~A part of a PASS logo system which can select a set of assets on a PASS disc~~
**Receiving System**
Receiving Systems are those systems that need to read Digi-Albums. They can take on many forms such as: Kiosks, PCs, DVD Players, etc... The primary task of a Receiving System is to read the PASS Version ID to determine how the media was written and then to be able to access the assets and presentation data stored on the media. This information will then be used by systems that have a playback component, print component, or interface with a Content Store. The Receiving System will be responsible for the following functions:
· Read the asset files on the media
· Read the unique Media ID
· Read PASS Specification Version ID
· Read asset meta-data
· Read assets Asset ID
· Optionally read previous PASS versions

**root directory**
The top directory of volume.
**shared asset**
An asset file, such as music and frame template image file, which is intended to be shared among albums. Shared assed are typically in a common directory on a particular Digi-Album.
**shared asset directory**
Directory which contains PASS shared assets. It is located under root directory and named "SHARED".
**Thumbnail file**
A derived file based on an image asset, typically of reduced resolution and of smaller size when displayed.

## 4 Referenced Documents

**[DC]**
"Dublin Core Metadata Initiative", a Simple Content Description Model for Electronic Resources.
Available at http://purl.org/DC/
**[DC-NMF]**
"Dublin Core Normalized Metadata Format Profile Specification 1.0"; OSTA, 2002.
Available at http://www.osta.org/mpv/
**[DCF-1999]**
"Design rule for Camera File system, Version 1.0", JEIDA standard, English Version 1999.1.7, Japanese Electronic Industry Development Association (JEIDA).
**[DIG35-2001]**
"DIG35 Specification – Metadata for Digital Images, Version 1.1", June 18, 2001, International Imaging Industry Association (I3A) [recently formed by combining the Digital Imaging Group and PIMA].
http://www.i3a.org
**[DPOF]**
"DPOF (Digital Print Order Format) Specification Version 1.1", July 17, 2000, Canon Inc, Eastman Kodak Company, Fuji Photo Film Co., Ltd., Matsushita Electric Industrial Co., Ltd.
**[Exif2002]**
"Exchangeable image file format for digital still cameras: Exif Version 2.2", JEITA CP-3451, Japan Electronics and Information Technology Industries Association (JEITA), February 19, 2002.
**[ISO 9660]**
ISO/IEC DIS 9660:1999(E) Information processing - Volume and file structure of CD-ROM for Information Interchange
**[J2K-Part1]**
"JPEG 2000 Part 1 FDIS (includes COR 1, COR 2, and DCOR3)", ISO/IEC JTC1/SC29 WG1, JPEG 2000 Editor Martin Boliek, Co-editors Charilaos Christopoulos and Eric Majani, December 4, 2001.
**[J2K-Part2]**
"JPEG 2000 Part 2 FDIS (includes DCOR 1)", ISO/IEC JTC1/SC29 WG1, JPEG 2000 Editor Martin Boliek, Co-editors Eric Majani, J. Scott Houchin, James Kasner, and Mathias Larsson Carlander, December 4, 2001.
**[JFIF]**
"JPEG File Interchange Format, Version 1.02"; Eric Hamilton, September 1992.
Available at http://www.w3.org/Graphics/JPEG/jfif.txt
**[MANIFEST]**
"XML Manifest Specification 1.0"; OSTA, 2002.
Available at http://www.osta.org/mpv/
**[MPEG-1]**

ISO/IEC 11173 Information technology-Generic coding of moving pictures and associate audio information
**[MPEG-2]**
ISO/IEC 13818 Information technology-Generic coding of moving pictures and associate audio information
**[MPEG-4]**
ISO/IEC 14496-2 Information technology-Generic coding of moving pictures and associate audio information
~~[MPEG-7]~~
~~ISO/IEC 15938 Information technology-Generic coding of moving pictures and associate audio information~~
**[MPV-Basic]**
"MPV Basic Profile Specification 1.0"; OSTA, 2002.
Available at http://www.osta.org/mpv/
**[MPV-Core]**
"MPV Core Specification 1.0"; OSTA, 2002.
Available at http://www.osta.org/mpv/
**[MPV-Pres]**
"MPV Presentation Profile Specification 1.0"; OSTA, 2002.
Available at http://www.osta.org/mpv/
*MPV Core Specification*
Ver. 1.01, 11 March 2003 © 2001-2003 OSTA 132 of 133
**[NMF]**
"Normalized Metadata Format Specification 1.0"; OSTA, 2002.
Available at http://www.osta.org/mpv/
**[NTSC video]**
SMPTE 170M-1994 Television-Composite Analog Video Signal- NTSC for Studio Applications
ITU-R BT.470-4 Television Systems

OSTA-Web is not a spec. We need to reference all the MPV specs

~~[OSTA-Web]~~
Optical Storage Technology Association website.
Available at http://www.osta.org/
**[PAL video]**
ITU-R BT.470-4 Television Systems
**[UDF]**
"Universal Disk Format Specification 2.50"; OSTA, 2003.
Available at http://www.osta.org/mpv/
**[XML10]**
"Extensible Markup Language (XML) 1.0" T. Bray, J. Paoli and C.M. Sperberg-McQueen. W3C Recommendation 10 February 1998 ,
Available at http://www.w3.org/TR/REC-xml
**[XMLBase]**
"XML Base", Tim Bray, Dave Hollander, Andrew Layman. W3C Recommendation 27 June 2001,
Available at http://www.w3.org/TR/xmlbase/
**[XML-NS]**
"Namespaces in XML", Tim Bray, Dave Hollander, Andrew Layman. W3C Recommendation 14 January 1999,
Available at http://www.w3.org/TR/REC-xml-names
**[XMP-FW]**
"*XMP – Extensible Metadata Platform 14 Sept 01*" , Copyright 2001 Adobe Inc,
Available at http://partners.adobe.com/asn/developer/xmp/download/docs/MetadataFramework.pdf
**[XSCHEMA]**
"XML Schema, XML Schema Part 1: Structures". W3C Recommendation 2 May, 2001.
Available at http://www.w3.org/TR/xmlschema-1/

[XSCHEMA2]
"XML Schema, XML Schema Part 2: Datatypes". W3C Recommendation, 2 May, 2001.
Available at http://www.w3.org/TR/xmlschema-2/
[XSL]
"XSL Transformations (XSLT) Version 1.0", W3C Recommendation, 16 November, 1999.
Available at http://www.w3.org/TR/xsl/

<List only normative references, informative references will be listed in an appendix. I an not sure all these are normative. What is needed to support certification?>

(TBD) PASS Logo and Trademark Licensing Document [inform SC about this reference]

# 5 Logical Disk Components

This section describes the logical components that compose a PASS Disc.

## *5.1 Files*

### 5.1.1 PASS Asset File Formats

In this section defines the kinds of PASS asset file formats, which are compatible with the PASS Logical Disc Specification.

The latest version of an asset file format spec will be referenced in the PASS Specifications.

Example PASS assets may be;

- Still image files, Motion image files, and audio files captured by DSC, DVCAM coder and Voice recorder
- Still image files scanned and digitized from films and prints

#### *5.1.1.1 File format for still image data*

5.1.1.1.1 Mandatory file format for still image data

- Exif-JPEG

More detail needed here. PASS should support EXIF 2.x with sRGB support allowed only.

#### *5.1.1.2 File format for motion image data*

5.1.1.2.1 Mandatory file format for motion image data

- Motion-JPEG (AVI,MOV)
- MPEG1
- MPEG2
- MPEG4

More detail needed here.

#### *5.1.1.3 File format for audio data*

5.1.1.3.1 Mandatory file format for audio data

- MP3
- WAV

Need more detail here. What is the sampling rate?

### 5.1.2 System Generated Files

A PASS Digi-Album has several MPV Manifests. These manifests have a variety of functions depending on what directory (container) they are describing.

#### *5.1.2.1 PASS Specific XML Elements*

PASS defines some specific XML elements that are unique to the PASS system. These XML elements describe metadata that applies to the entire PASS Digi-Album (the medium), the still images and other PASS assets within the PASS media, and the albums described on that Digi-Album. PASS specification adopts Dublin Core Element Metadata Set (DCES) for general metadata and DIG35(or JPEG2000 Part2) for still image metadata. Any metadata that is not defined by DCES or DIG35 is defined in this PASS Specification. The PASS specific XML elements have their own XML namespace designated as "http://ns.pass.org/PASS/1.0/" (TBD). There is an XML Schema associated with the PASS specific XML elements. That schema is located at: (TBD).

There are several kinds of metadata described in the PASS specification. Specifically:

- metadata for the entire PASS media
- metadata for each PASS Asset where an PASS asset is a file contributed by the consumer
- metadata for Albums
- metadata for PASS asset lists
- metadata for file histories including migration

The metadata is created in the cases below:

- creating new PASS media
- editing PASS media
- migrating PASS media

5.1.2.1.1 General Purpose Metadata for the PASS medium

The metadata about the entire medium, which is known as a Digi-Album in the PASS specifications, shall include the elements <dc:date>, <dc:title> and <dc:description> from Dublin Core Specifications.

The definition of certain XML elements, namely <pass: Medium ID>, <pass:mediumLabel>, <pass:originator>, <pass:inheritedDate>, and <pass:specificationVersion>, are in a PASS specific schema and namespace. These Metadata elements are found in the PASIDX.PVM manifest. These elements are also found in manifests that describe migrated content.

5.1.2.1.2 Migration and associated Metadata

This section describes the migration feature of a PASS compliant system. A PASS system permits migration of one or more entire Digi-Albums into a new Digi-Album. This is effectively a merge of distinct Digi-Albums into one Digi-Album. In a PASS version 1.0 system, a new Digi-Album is recorded in each migration. The PASS version 1.0 system does not allow information to be appended to an existing Digi-Album.

It is possible to have different directory structures on PASS Digi-Albums. Kodak Picture CD, Fuji Color CD, and Konica Minolta Hot Album are examples of such Digi-Albums. A removable storage medium can be a compliant Digi-Album if it has appropriately structured manifests as described in this specification. When migration is performed by a PASS compliant system, the system must be capable of creating a Digi-Album with the Recommended Directory and File Structure described in this specification. This specification does not address how to migrate content when the destination medium is not following the Recommended Directory and file Structure.

Only asset files that have formats that are described in this specification will be migrated. If a particular Digi-Album has asset files of formats other than those described in this specification, those asset files are not guaranteed to be migrated.

*5.1.2.1.2.1 PASS General Information Metadata*

PASS Digi-Albums are identified by metadata in the PASS Index Manifest File (PASSIDX.PVM). This metadata is referred to as the PASS General Information Metadata.

```
<!-- PASS General Information -->
< mpv:Metadata>
    <pass:generalInformation>
        <pass:mediumID>abe34y5-3hi2-q9m6-1hauej38d6no</pass:mediumID>
        <pass:specificationVersion> PASS_Version_1.0</pass:specificationVersion>
        <pass:originator>Kodak Picture Maker</pass:originator>
        <pass:mediumLabel>My Winter Vacation 2005</pass:mediumLabel>
    </pass:generalInformation>
</mpv:Metadata>
```

*5.1.2.1.2.2 PASS Inherited (Migrated) Metadata*

When copying PASS Assets Files, Playlists, or entire Digi-Albums between PASS Digi-Albums, a PASS compliant system shall insert the date when the migration (copying) occurred and the PASS General Information Metadata into the appropriate PASS manifest that describes the object migrated.

```
<!-- PASS Inherited Information -->
< mpv:Metadata>
   < pass:inheritedInfo >
      <pass:inheritedDate>2004-10-10</pass:inheritedDate>
      <pass:generalInformation>
         <pass:mediumID> abe34y5-3hi2-q9m6-1hauej38d6no </pass:mediumID>
         <pass:specificationVersion> PASS_Version_1.0</pass:specificationVersion>
         <pass:originator>Kodak Picture Maker</pass:originator>
         <pass:mediumLabel>My Winter Vacation 2005</pass:mediumLabel>
      </pass:generalInformation>
   </pass:inheritedInfo>
</mpv:Metadata>
```

*5.1.2.1.2.3 Metadata Insertion rules*

In all cases, Inherited Metadata shall be inserted into the PASS Index Manifest File (PASSIDX.PVM) When an entire Digi-Album is migrated ALL Playlist Manifest Files shall be migrated to the new Digi-Album.

*5.1.2.1.2.4 Migration Strategy for Multiple Generations of Migration*

It is possible that when migrating information to a new Digi-Album, the Asset Roll directories with their corresponding assets files and the Play List Manifest Files may have been previously migrated. In this case, any Inherited Metadata that was inserted into the PASS Index Manifest File, any Playlist Manifest

File, and any Asset Manifest File SHALL be retained, and the new Inherited Metadata associated with the current migration SHALL be added to the corresponding manifests files.

*5.1.2.1.2.5 Migration Directory Management*

A Digi-Album only is permitted to have one SHARED directory, consequently when Digi-Albums are merged by migration all SHARED directories are combined.

Asset Roll directories as described in the Recommended Directory Structure are copied in their entirety to the new Digi-Album and the Inherited Metadata is inserted in the Asset List Manifest File.

When migrating from legacy media to the recommended directory structure, directories are mapped into the recommended container as identified in Appendix A.

### *5.1.2.2 Index Manifest File*

5.1.2.2.1 Overview

The Index Manifest File on a PASS Digi-Album shall have a fixed name of PASSIDX.PVM. This index file shall contain reference links to all other MPV Manifests on the Digi-Album. Within a PASS compliant system there is a restriction to the assignment of the MPV Manifest Link ID. The originating system shall number all such links from smallest to largest, starting at one.

There must be one single PASS Index Manifest File on a PASS Digi-Album, and it must be located in its root area directory. The name shall be "PASSIDX.PVM". The index manifest file must be an OSTA MPV manifest file. Its top element is the <file:Manifest>. It includes PASS medium ID and all the other metadata about the entire medium. The PASS Index Manifest File must have pointers to access to all of the manifest files in the medium *directly*.

The metadata about the entire media shall include <dc:date>, <dc:title> and <dc:description>. <pass:Medium ID>, <pass:specificationVersion>, <pass:originator>, and <pass:mediumLabel>.

(TBD) A schema is needed to define the elements in the pass namespace

The PASS Index Manifest File is the entry point of PASS system. It contains path information to each PASS associated file such as PASS asset manifest files, and PASS album manifest files.

Unless specifically restricted in Table 2, the Receiving System shall be able to understand all MPV elements in a manifest file and all metadata elements identified in this standard. Table 3 describes any mandatory display requirements for the elements associated with asset metadata.

5.1.2.2.2 Manifest file Naming Restrictions

The name of PASS Index Manifest File in ALL Digi-Albums is defined as "PASSIDX.PVM".

5.1.2.2.3 Mandatory MPV Profiles

1. MPV Basic Profile

2. MPV Presentation Profile

5.1.2.2.4 Mandatory Non-PASS Elements

The PASS Index Manifest File should meet the requirements of the MPV Specifications. There is one exception to this in that PASSIDX.PVM is not a defined name for an Index Manifest in the MPV Core Specification.

The following non-PASS elements shall be mandatory for the PASS Index Manifest File

Table 1: Mandatory non-PASS elements in the PASSIDX.PVM file that are not Mandatory in MPV

| tag | child tag | content | |
|---|---|---|---|
| <> | | | |
| <> | | | |

5.1.2.2.5 Restricted Non-PASS elements

The following non-PASS elements shall have restricted usage in the PASS Index Manifest File

Table 2: Restricted non-PASS elements in the PASSIDX.PVM file

| tag | child tag | content | |
|---|---|---|---|
| <> | | | |
| <> | | | |

5.1.2.2.6 PASS Specific elements in the PASS Index Manifest File

The following PASS specific elements have usage in the PASS Index Manifest File

Table 3: PASS Metadata Applicable to the PASS Index Manifest file.

| | PASS Metadata | XML Tag Name with Namespace | Description of Metadata Element | Created Metadata by Originating System | Capability to be Displayed by Receiving/Playback System |
|---|---|---|---|---|---|
| PASS INDEX MANIFEST | PASS medium ID | Pass:mediumID | This is a UUID, encoded in 8-4-4-12 character format | Mandatory | Optional |
| | PASS originator information | Pass:originator | An text encoding that can identify the originating system. The format f the string is unconstrained. | Mandatory | Optional |
| | PASS specification version | Pass:specificationVersion | An text encoding of the version of the PASS specification used by the originating system | Mandatory | Optional |
| | PASS medium label | Pass:mediumLabel | An text encoding to associate the medium with Volume ID. Its use is optional. The format is TBD. | Optional | Optional |
| | Migration date (if migrated) | Pass:inheritedDate | An encoding of the date that migration was performed. The format is TBD. | Mandatory (if migrated) | Optional |
| | PASS General Information | Pass:generalInfo | A complex element the bundles the mediumID, specificationVersion, originator, and the mediumLabel | Mandatory | Optional |
| | PASS Inherited Info | Pass:inheritedInfo | A complex element that bundles the generalInfo from each migrated Digi-Album | Mandatory (if migrated) | Optional |

### *5.1.2.3 Playlist Manifest File*

5.1.2.3.1 Overview

One or more Playlist Manifest Files will be in the Album directory and contain album information. A PASS Digi-Album may have several PASS assets. An Album is a collection of assets that a Playlist Manifest File describes. A Playlist Manifest File describes a presentation for that Album via XML elements of the MPV Presentation Profile.

A particular Digi-Album may have one or more Playlist Manifest Files, each treated as a PASS asset and but not appearing as an asset list on an MPV asset list.

Unless specifically restricted in Table 5, the Receiving System shall be able to understand all MPV elements in a manifest and all metadata elements identified in this standard. Table 6 describes any mandatory display requirements for the elements associated with asset metadata.

5.1.2.3.2 Playlist Manifest file Naming Restrictions

The Default Play List Manifest files that are generated for each Asset Roll directory shall have a file name that shall be equal to the name of the Asset Roll directory that corresponds to that default playlist manifest with the character string "PLAR" pre-pended to the Default Playlist Manifest Files name. This convention shall be followed for all Digi-Albums. Certain Legacy systems may create CD based Digi-Albums that do not follow.

5.1.2.3.3 Mandatory MPV Profiles

1. MPV Basic Profile

2. MPV Presentation Profile

5.1.2.3.4 Mandatory Non-PASS Elements

A Playlist Manifest File shall be a conforming MPV Manifest file.

Table 4: Mandatory Non-PASS elements in a Playlist manifest file that are not Mandatory in MPV

| tag | child tag | content | |
|---|---|---|---|
| <> | | | |
| <> | | | |

5.1.2.3.5 Restricted Non-PASS elements for a Playlist Manifest file

The following non-PASS elements shall be NOT be permitted for any Album in a Playlist Manifest File.

Table 5: MPV Elements not permitted in a Playlist Manifest File

| tag | child tag | content | |
|---|---|---|---|
| | | | |
| | | | |

5.1.2.3.6 PASS Specific elements in the PASS Playlist Manifest File

Since a consumer creates the PASS Albums (other than the default Playlist), PASS considers an Album an asset that is described by a dedicated Playlist Manifest. The Playlist Manifest File shall include minimally the <dc:title> and <dc:date> elements.

The transitions in the Slide Shows of PASS Digi-Albums are those described in MPV Presentation Profile and those PASS specific extensions defined in the specification in the section describing the Playlist Manifest File (TBD).

- Minimum transitions are recommended.
- May refer to SMPTE transitions.
- It is hard to implement on CE devices?
- (TBD) PASS defines the capability to describe alternative transitions.

Table 6: PASS Metadata Applicable to Playlist Manifest Files (Albums).

| PASS metadata | XML tag name with namespace | Description of Metadata Element | Created metadata by originating system | Capability to be displayed by Receiving/Playback System |
|---|---|---|---|---|
| Playlist Favorite level | pass:playlistFavorite | This element when recorded will permit an enabled Receiving/Playback System to Prioritize the Custom Playlists that are displayed to the user. The element will be of integer type where the value "0" is undefined and the values 1 through 5 are permitted. A Receiving/Playback System shall interpret the value 5 as the most favorite or highest priority. 1 shall correspond to least favorite or lowest priority. | Optional | Optional |
| PASS medium ID | pass:mediumID | This is a UUID, encoded in 8-4-4-12 character format | Mandatory | Optional |
| PASS originator information | pass:originator | An text encoding that can identify the originating system. The format f the string is unconstrained. | Mandatory | Optional |
| PASS specification version | pass:specificationVersion | An text encoding of the version of the PASS specification used by the originating system | Mandatory | Optional |
| PASS medium label | pass:mediumLabel | An text encoding to associate the medium with Volume ID. Its use is optional. The format is TBD. | Optional | Optional |
| Migration date (if migrated) | pass:inheritedDate | An encoding of the date that migration was performed. The format is TBD. | Mandatory (if migrated) | Optional |
| PASS General Information | pass:generalInfo | A complex element the bundles the mediumID, specificationVersion, originator, and the mediumLabel | Mandatory | Optional |
| PASS Inherited Info | pass:inheritedInfo | A complex element that bundles the generalInfo from each migrated Digi-Album | Mandatory (if migrated) | Optional |

5.1.2.3.7 Default Play List Manifest files

Each PASS Asset Roll directory, which in a generic sense is any directory that contains PASS asset files, will have a corresponding Default Playlist Manifest in an ALBUM directory. A Default Playlist Manifest File will have a file name that is the same as the Asset Roll directory to which it corresponds, with the fixed character sequence of "PLAR" pre-pended to the Asset Roll Directory name .

A Default Playlist Manifest File shall be have its <dc:title> generated so that the a title shall be formatted to "YYYY.MM.DD-YYYY.MM.DD", where the first is the earliest captured date and the second is the latest captured date of the assets included in the Asset Roll directory.

Moreover, if there is no date information such as film scanning images, Originating system may create a title combining "Album" and number order ("001", "002") of Album in media, such as "Album001" and "Album002" as an Album Title.

### *5.1.2.4 PASS Asset List Manifest File*

5.1.2.4.1 Overview

A PASS Asset List Manifest File will be under an Asset Roll directory and there will be one or more Asset Roll directories on a PASS Digi-Album. Each Asset Roll directory will have one and only one Asset List Manifest File

The asset list is the collection of pointers to assets in PASS media, and it includes metadata information to show its contents and locations. In other words, the asset list functions as a table of assets in a database. Every PASS Asset List Manifest file must be traced from the PASS index file.

The notation of a PASS Asset List follows MPV specifications. The MPV specification allows only one asset list to exist in a manifest file.

The PASS Asset List Manifest File is a generated file not created by the consumer but rather the PASS authoring component and is not considered an asset itself. Therefore the PASS Asset List Manifest File does not include the <dc:title> and <dc:date> elements.

PASS Asset List Manifest Files contain metadata for asset list of each asset file under Asset Roll directory such as pre-existing metadata from EXIF tag, migration associated metadata and so on.

Within a particular PASS Asset List Manifest File, when the <mpv:id> element is used the originating system shall generate ID values for smallest to largest, starting with one.

5.1.2.4.2 PASS Asset Types, Simple and Compound

When a consumer's assets are initially captured the capture device may create two distinct files associated with one capture event. An example of this would be the simultaneous creation of an EXIF and MP3 file. The files are placed in a common directory with a related filename. A PASS system retains the association of these files by creating a Still with Audio asset described in metadata. Such an association is known in the PASS environment as a compound asset.

#### *5.1.2.4.2.1 Simple Asset*

A simple asset is when the asset identified in the PASS Asset Manifest File references one particular file.

An Example:

```
<mpv:Still mpv:id="ID000101">
<mpv:InstanceID>AC937BCFA3B340da971BAF09B17DBC324</mpv:InstanceID>
<mpv:LastURL>DSC01934.JPG</mpv:LastURL>
</mpv:Still>
```

#### *5.1.2.4.2.2 Compound Asset*

A compound asset is when the asset identified in the PASS Asset Manifest File references more than one particular file.

An Example:

```
<mpv:StillWithAudio mpv:id="ID000100">
<mpv:StillRef mpv:idRef="ID000101"/>
<mpv:AudioRef mpv:idRef="ID000102"/>
```

*5.1.2.4.2.3 Metadata Associated with Compound Assets*

When a Compound Asset is present, the Metadata associated with the entire compound asset shall appear immediately following the MPV element identifying the compound asset.

The Receiving System shall be able to understand all MPV elements in a manifest and all metadata elements identified in this standard. Tables 7, 8, and 9 describe any mandatory display requirements for the elements associated with asset metadata.

5.1.2.4.3 Manifest file Naming Restrictions

It is mandatory that a PASS Asset List Manifest File has a file name equal to the name of the Asset Roll Directory. This restriction applies to Legacy implementations as well.

5.1.2.4.4 Mandatory MPV Profiles

MPV Basic Profile

MPV Presentation Profile

5.1.2.4.5 Mandatory Non-PASS Elements

An Asset List Manifest File must be a compliant MPV Manifest file.

5.1.2.4.6 Optional Non-PASS Elements

The following non-PASS elements are may be present for each PASS Asset in a PASS Asset List Manifest File.

All PASS Assets must have the following non-Pass metadata elements

Table 7: General Optional Non-PASS Metadata Elements in an Asset List Manifest File

| | PASS metadata | XML Tag Name | Description of Metadata Elements | Created Metadata by Originating System | Capability to be Displayed by Receiving/Playback System |
|---|---|---|---|---|---|
| PASS ASSET MANIFEST | Title of each ASSET | dc:title | A name given to the resource. Typically, Title will be a name by which the resource is formally known. | Mandatory | Mandatory |
| | Creator of each ASSET | dc:creator | An entity primarily responsible for making the content of the resource. Examples of Creator include a person, an organization, or a service. Typically, the name of a Creator should be used to indicate the entity. | Optional | Optional |
| | File format of each ASSET(DC format) | nmf:Metadata; properties, format | The format of an asset file will be described using normalized metadata format. The file format describe the particular file encoding of the asset. | Mandatory | Optional |
| | Description of each ASSET | dc:description | An account of the content of the resource. Examples of Description include, but is not limited to: an abstract, table of contents, reference to a graphical representation of content or a free-text account of the content. | Optional | Optional |
| | Date of each ASSET captured | dc:date | A date of an event in the lifecycle of the resource. Typically, Date will be associated with the creation or availability of the resource. Recommended best practice for encoding the date value is defined in a profile of ISO 8601 [W3CDTF] and includes (among others) dates of the form YYYY-MM-DD. | Mandatory | Mandatory |

5.1.2.4.7 Non-PASS Metadata Elements Specific to Image Assets

*5.1.2.4.7.1 Metadata for Still Images Files*

Metadata associated with still images in the PASS specification are based on Dublin Core Element Metadata Set (DCES) and DIG35 (or Jpeg2000 Part2). DCES is used for generic information and DIG35 (Jpeg2000p2) is especially associated with still images.

- Categories of Still Image metadata as follows:
- Generic Metadata (DCES)
- Basic Image Parameter Metadata (DIG35)
- Image Creation Metadata (DIG35)
- Content Description Metadata (DIG35)
- History Metadata (DIG35)
- Intellectual Property Rights Metadata (DIG35)

Metadata included in EXIF tags must be mapped to XML (PASS Manifest file) by DIG35 mapping definition (DIG35 Specification Appendix VI).

*5.1.2.4.7.2 The following non-PASS elements must also be included for still image files.*

Table 8: Optional Non-PASS Metadata Elements in an Asset List Manifest File specific to Still Images

| | PASS metadata | XML tag name | Description of Metadata Element | EXIF Tag | Created metadata by originating system | Capability to be displayed by Receiving/Playback System |
|---|---|---|---|---|---|---|
| PASS ASSETLIST MANIFEST | Width of still ASSET | dig35:BASIC_IMAGE_PARAM<br>dig35:BASIC_IMAGE_INFO<br>dig35:IMAGE_SIZE<br>dig35:WIDTH | X Dimension in Pixels | 40962 | Optional | Optional |
| | Height of Still Image | dig35:BASIC_IMAGE_PARAM<br>dig35:BASIC_IMAGE_INFO<br>dig35:IMAGE_SIZE<br>dig35:HEIGHT | Y Dimension in Pixels | 40963 | Optional | Optional |
| | Colorspace of Still Image | dig35:BASIC_IMAGE_PARAM<br>dig35:COLOR_INFO<br>dig35:COLORSPACE<br>dig35:PROFILE_NAME | Colorspace of Still Image | 409610 | Mandatory | display according to the color space specification information as Mandatory |
| | Position of Subject within Still Image | dig35:IMAGE_CREATION<br>dig35:CAMERA_CAPTURE<br>dig35:CAMERA_SETTINGS<br>dig35:SUBJECT_POSITION | Position of Subject within Still Image | 41492 | Optional | Optional |
| | GPS information | dig35:IMAGE_CREATION<br>dig35:CAMERA_CAPTURE<br>dig35:CAMERA_SETTINGS<br>dig35:CAMERA_LOCATION | GPS Information | not defined | Optional | Optional |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Orientation of original Still Image | dig35:IMAGE_CREATION<br>dig35:CAMERA_CAPTURE<br>dig35:CAMERA_SETTINGS<br>dig35:ORIENTATION<br>dig35:ROLL | Orientation of still image is described by the three elements <pitch>, <yaw>, and <roll>. PASS has specific usages for the <ROLL> element | 274 | Mandatory | display accoring to orientation information as Mandatory |
| | Location | dig35:CONTENT_DESCRIPTION<br>dig35:LOCATION | The location of the image, longitude/latitude/altitude, address, or any comment | not defined | Optional | Optional |
| | Person Name (for each person) | dig35:CONTENT_DESCRIPTION<br>dig35:PERSON<br>dig35:PERSON_NAME<br>dig35:NAME_COMP | a person name within the image, "Given" name and "Family" name shall be supported as the attributes of NAME_COMP | not defined | Optional | Optional |
| | Position (for each person) | dig35:CONTENT_DESCRIPTION<br>dig35:PERSON<br>dig35:POSITION | The position of each person within the image, Rectangular area shall be suppoted as position data type. | not defined | Optional | Optional |
| | Comment (for each person) | dig35:CONTENT_DESCRIPTION<br>dig35:PERSON<br>dig35:COMMENT | Any comment for each person within the image | not defined | Optional | Optional |
| | Thing Name (for each thing) | dig35:CONTENT_DESCRIPTION<br>dig35:THING<br>dig35:NAME | the name of thing within the image | not defined | Optional | Optional |
| | Position (for each thing) | dig35:CONTENT_DESCRIPTION<br>dig35:THING<br>dig35:POSITION | The position of each thing within the image | not defined | Optional | Optional |
| | Comment (for each thing) | dig35:CONTENT_DESCRIPTION<br>dig35:THING<br>dig35:COMMENT | Any comment for each thing within the image | not defined | Optional | Optional |
| | Event Type | dig35:CONTENT_DESCRIPTION<br>dig35:EVENT<br>dig35:EVENT_TYPE | the event type within the image | not defined | Optional | Optional |
| | Description (for event) | dig35:CONTENT_DESCRIPTION<br>dig35:EVENT<br>dig35:DESCRIPTION | description of the event within the image | not defined | Optional | Optional |
| | Comment (for event) | dig35:CONTENT_DESCRIPTION<br>dig35:EVENT<br>dig35:COMMENT | Any comment for the event | not defined | Optional | Optional |

5.1.2.4.8 PASS Specific Elements in the Asset List Manifest File

In general, a specific Asset Roll directory can be migrated separately. Consequently a particular PASS Asset List Manifest File might have inheritance metadata.

Table 9: PASS Metadata Applicable to Pass Asset Manifest files.

| | PASS Metadata | XML Tag Name with Namespace | Description of Metadata Element | Created Metadata by Originating System | Capability to be Displayed by Receiving/Playback System |
|---|---|---|---|---|---|
| PASS INDEX MANIFEST | Asset Favorite level | pass:assetFavorite | This element when recorded will permit an enabled Receiving/Playback System to Prioritize the assets that are displayed to the user. The element will be of integer type where the value "0" is undefined and the values 1 through 5 are permitted. A Receiving/Playback System shall interpret the value 5 as the most favorite or highest priority. 1 shall correspond to least favorite or lowest priority. | Optional | Optional |
| | PASS medium ID | pass:mediumID | This is a UUID, encoded in 8-4-4-12 character format | Mandatory | Optional |
| | PASS originator information | pass:originator | An text encoding that can identify the originating system. The format f the string is unconstrained | Mandatory | Optional |
| | PASS specification version | pass:specificationVersion | An text encoding of the version of the PASS specification used by the originating system | Mandatory | Optional |
| | PASS medium label | pass:mediumLabel | An text encoding to associate the medium with Volume ID. Its use is optional. The format is TBD | Optional | Optional |
| | Migration date (if migrated) | Pass:inheritedDate | An encoding of the date that migration was performed. The format is TBD. | Mandatory (if migrated) | Optional |
| | PASS General Information | Pass:generalInfo | A complex element the bundles the mediumID, specificationVersion, originator, and the mediumLabel | Mandatory | Optional |
| | PASS Inherited Info | pass:inheritedInfo | A complex element that bundles the generalInfo from each migrated Digi-Album | Mandatory (if migrated) | Optional |

## *5.2 Playlist Selection and Control Information*

This section describes the on-disc data sets and manifests needed to support the album/asset selection function on the playback device. It allows the PASS to define a playback device control model similar to the DVD-Video specification.

(TBD) This section requires input from the CE manufacturers.

## *5.3 Container Types*

In general containers hold a collection of files. Generally, this corresponds to the directories in a file system. In a disc conforming to the PASS Logical Disc Specification, the containers hold files of similar types as described below. Some of the containers may also contain other containers where the other containers are of similar type

### 5.3.1 Asset directory

The Asset directory is a child of the root directory. It only contains other containers or it contains PASS Asset Files and a corresponding PASS Asset List Manifest File. Examples of names that this directory may have are ASSET, DCIM and PICTURES.

#### *5.3.1.1 Restrictions*

This directory is only permitted to contain PASS Asset Files and a PASS Asset List Manifest File or Asset Roll directories but not both.

### 5.3.2 Asset Roll directory

The Asset Roll directory is a child of the Asset directory and generally contains assets that primarily have originated from scanning a single roll photographic film. Alternatively, this directory may contain assets that primarily have originated from a digital capture device, such as a Digital Still Camera (DCS). In this case each Asset Roll directory corresponds to a particular capture session, power up sequence of the capture device, or capture device memory card removal-insertion sequence.

This directory may have different names depending on the Profile of the application. Example names: 001ABCDE, AR20040925_abcdefgh.

#### *5.3.2.1 Restrictions*

An Asset Roll directory has one and only one Asset List Manifest File within it that describes the assets in that particular Asset Roll directory. The Asset List Manifest File shall for each asset, have one or more elements that locate the derivative files for that asset which would be contained within a DISPLAY directory.

PASS restricts the use to uppercase in the Recommended Directory Structure.

### 5.3.3 Album directory

The Album directory is a child root contains manifests that are essentially playlists that describe Albums.

#### *5.3.3.1 Restrictions*

An Album directory shall have one or more Playlist Manifest Files that describe one or more Picture Collections or Digital Albums. A Digital Album may have an associated presentation typically a Slide Show.

There shall be no consumer assets in the Album directory. The Album directory shall only contain Playlist Manifests.

### 5.3.4 Display directories

The Display directories are optional directories that contain adjusted images for a screen display. A consumer's primary image assets may have different formats. These directories contain derivatives of those image assets that have been cropped and scaled for soft copy display. The purpose of this is to minimize the amount of processing needed by a playback or display device required to display the image asset.

The derivative assets are grouped by encoding type into a common container. That is to say, for example, thumbnails for NTSC display are in one container, another container is used for PAL. In general the container corresponds to an output device type.

The Display directories are located under an Asset Roll directory.

The derived files in a DISPLAY directory are optional since the receiving system is unknown by the originating system. However a given PASS application may target certain receiving systems and therefore the originating system may create a DISPLAY directory for one or more particular display device types.

Typically a derivative display file is a low-resolution image file from original asset file, which is a still image.

#### *5.3.4.1 The Structure of the Display Directories*

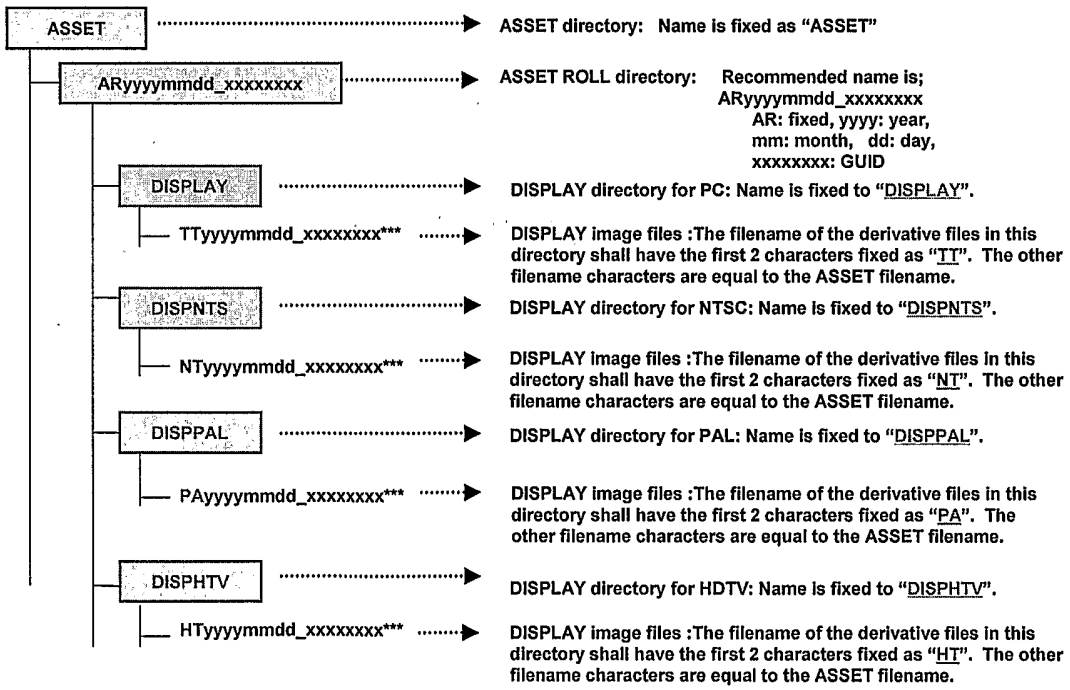



Figure 1: The example structure of the Display directories.

5.3.4.1.1 Naming Conventions

The Display directories shall have a name prefix of "DISP". The other characters in a particular display directory name shall be three to eight UTF-8 characters. The kinds of Display directories are determined by attributes identified in this specification. Examples are: PAL, NTSC, etc.

5.3.4.1.2 Restrictions

The Display directories shall only contain derivative files. No Asset List Manifest Files are permitted.

5.3.4.1.3 Defined Display Directories and their Attributes

This specification version identifies attributes that define the following Display Directories

*5.3.4.1.3.1 DISPLAY*

This directory shall have derivative files that have been optimized for display on a PC.

The filename of the derivative files in this directory shall have the first 2 characters fixed as "TT". The other filename characters are equal to ASSET filename.

*5.3.4.1.3.2 DISPNTS*

This directory shall have derivative files that have been optimized for display on a NTSC television.

The filename of the derivative files in this directory shall have the first 2 characters fixed as "NT". The other filename characters are equal to ASSET filename.

• **NTSC** stands for the *National Television Systems Committee* of the Electronic Industries Association (EIA), which prepared the TV standard for the USA, Canada, Japan, Central America, half of the Caribbean and half of South America. NTSC uses 30 frames (60 fields) per second; video is usually 525 lines, 60 Hz with the number of active display lines being 480.

*5.3.4.1.3.3 DISPPAL*

This directory shall have derivative files that have been optimized for display on a PAL television.

The filename of the derivative files in this directory shall have the first 2 characters fixed as "PA". The other filename characters are equal to ASSET filename.

**PAL** (Phase Alternation Line) is the TV format used in most of Western Europe, Australia and other countries. When referring to PAL video, what is normally meant is 625 line 50 Hz video, since PAL only refers to the way color signals are coded for broadcast purposes. The number of active display lines is 576 and it uses 25 frames(50 fields) per second.

*5.3.4.1.3.4 DISPHTV1080I*

This directory shall have derivative files that have been optimized for display on a HDTV 1080 interlaced.

The filename of the derivative files in this directory shall have the first 2 characters fixed as "HT". The other filename characters are equal to ASSET filename.

**HDTV 1080-i** *(High Definition Television- interlaces)* generally agreed upon definition of HDTV is approximately twice the vertical and horizontal picture resolution of today's NTSC TV, which essentially makes the picture twice as sharp. This interlaced scanning format has 1125 scanning line with 1080 effective scanning with an aspect ratio of 16:9 and a pixel number of 1920x1080.

*5.3.4.1.3.5 DISPHTV1080P*

This directory shall have derivative files that have been optimized for display on a HDTV 1080 progressive.

The filename of the derivative files in this directory shall have the first 2 characters fixed as "HT". The other filename characters are equal to ASSET filename.

**HDTV 1080-p** *(High Definition Television- progressive) is a* progressive scanning format has 1125 scanning line with 1080 effective scanning with a aspect ratio of 16:9 and a pixel number of 1920x1080.

*5.3.4.1.3.6 DISPHTV720P*

This directory shall have derivative files that have been optimized for display on a HDTV 720 progressive.

The filename of the derivative files in this directory shall have the first 2 characters fixed as "HT". The other filename characters are equal to ASSET filename.

**HDTV 720-p** *(High Definition Television- progressive) is a* progressive scanning format has 750 scanning line with 720 effective scanning with a aspect ratio of 16:9 and a pixel number of 1280x720.

*5.3.4.1.3.7 DISPSTV480I*

This directory shall have derivative files that have been optimized for display on a SDTV 480 interlaced.

The filename of the derivative files in this directory shall have the first 2 characters fixed as "ST". The other filename characters are equal to ASSET filename.

**SDTV 480***(Standard Definition Television)* is a scanning format has 525 scanning line with 480 effective scanning with a aspect ratio of 4:3 or 16:9 and a pixel number of 720x480.

*5.3.4.1.3.8 DISPSTV480P*

This directory shall have derivative files that have been optimized for display on a SDTV 480 progressive.

The filename of the derivative files in this directory shall have the first 2 characters fixed as "ST". The other filename characters are equal to ASSET filename.

5.3.4.1.4 Rotational information on Display directories

The asset roll manifest file must contain rotational information specified in the ORIENTATION Meta data value for each original asset. If a rendition is created for a particular asset then the asset roll manifest file may contain additional rotational information specified in the ORIENTATION Meta data for the rendition file. If the rotational aspect of the rendition image is different than the original asset image then the ORIENTATION Meta data for the rendition image should have the appropriate value specified.

An implementation example from asset roll manifest file:

```
<!--Still Image -->
<mpv:Still mpv:id="ID000200">
    <mpv:ContentID>urn:osta-org:mpv:dsig:md5:all:2wf2ac53d3n5814b320cd4db8z617d33</mpv:ContentID>
    <mpv:LastURL mpv:filesystem="UDF">OR20040120_XXXXXXX2.JPG </mpv:LastURL>
    <mpv:Metadata mpv:schemaURI="http://www.digitalimaging.org/dig35/1.1/xml">
        <METADATA xmlns="http://www.digitalimaging.org/dig35/1.1/xml">
            <BASIC_IMAGE_PARAM>
                <BASIC_IMAGE_INFO>
                    <IMAGE_SIZE>
                        <WIDTH>1536</WIDTH>
                        <HEIGHT>1024</HEIGHT>
                    </IMAGE_SIZE>
                </BASIC_IMAGE_INFO>
            </BASIC_IMAGE_PARAM>
            <IMAGE_CREATION>
                <CAMERA_CAPTURE>
                    <CAMERA_SETTINGS>
                        <ORIENTATION>90</ ORIENTATION >
                    </ CAMERA_SETTINGS >
                </ CAMERA_CAPTURE >
            </ IMAGE_CREATION >
        </METADATA>
    </mpv:Metadata>
    <nmf:Metadata>
        <Properties xmlns="http://purl.org/dc/elements/1.1/">
            <date>2001-06-14T16:08:40</date>
            <format>image/jpeg</format>
            <title>Model</title>
        </Properties>
    </nmf:Metadata>
    <mpv:Rendition mpv:renditionUsage="NTSC">
        <mpv:StillRef mpv:idRef="ID000201"/>
    </mpv:Rendition>
</mpv:Still>

<!--NTSC Rendition of Still Image -->
</mpv:Still>
<mpv:Still mpv:id="ID000201">
    <mpv:ContentID>urn:osta-org:mpv:dsig:md5:all:1fk48si5kl491257a20fdb38cc82jdp4</mpv:ContentID>
    <mpv:LastURL mpv:filesystem="UDF">DISPLAY/NT20040119_XXXXXXX2.JPG </mpv:LastURL>
    <mpv:Metadata mpv:schemaURI="http://www.digitalimaging.org/dig35/1.1/xml">
        <METADATA xmlns="http://www.digitalimaging.org/dig35/1.1/xml">
            <BASIC_IMAGE_PARAM>
                <BASIC_IMAGE_INFO>
                    <IMAGE_SIZE>
                        <WIDTH>600</WIDTH>
                        <HEIGHT>400</HEIGHT>
                    </IMAGE_SIZE>
                </BASIC_IMAGE_INFO>
            </BASIC_IMAGE_PARAM>
            <IMAGE_CREATION>
```

```
                <CAMERA_CAPTURE>
                    <CAMERA_SETTINGS>
                        <ORIENTATION>0</ ORIENTATION >
                    </ CAMERA_SETTINGS >
                </ CAMERA_CAPTURE >
            </ IMAGE_CREATION >
        </METADATA>
    </mpv:Metadata>
    <nmf:Metadata>
        <Properties xmlns="http://purl.org/dc/elements/1.1/">
            <date>2001-05-14T16:08:40</date>
            <format>image/jpeg</format>
            <title>2001-05-14T16:08:40</title>
        </Properties>
    </nmf:Metadata>
</mpv:Still>
```

### 5.3.5 Shared Asset Directory

This directory is a subdirectory to the ASSET directory. Normally it contains non-imaging assets common to two or more albums. These non-imaging assets can be such as audio files which are used as background music during slide show playing, template image files like photo frame which are used during slide show playing, and so on.

#### *5.3.5.1 Restrictions*

The Shared Asset Directory must have a Asset List Manifest that describes all PASS asset files that it contains.

## 6 Directory and File Structure

### *6.1 Overall structure*

All PASS Digi-Albums utilize the MPV manifests to locate Assets, capture metadata, and describe Albums. There must be a particular index file, namely PASS Index Manifest file, in the root directory of a PASS Digi-Album as the entry point to other manifest files on the PASS medium. This Index Manifest File is located through the file system.

In general a manifest file can be divided into any number of files and placed in any directories, if it can be traced from the index file. All PASS Dig-Album receiving systems shall be able to access to all of the manifests within a PASS Digi-Album by referring to the index file in the root directory. Likewise, PASS Dig-Album receiving systems shall be able to access the contents described by the manifests.

Additionally, except for the PASS Index Manifest File, there are no constraints on where to place manifest files and the contents described by them on the medium. However, this PASS Logical Disk Specification (LDS) describes several Profiles that define how the three PASS manifest types described in Section 6 are located in specific applications that use PASS Digi-Album. It is possible that a particular PASS Originating System has certain constraints that constrain the directory structure on a PASS Digi-Album. Consequently there are particular embodiments of the PASS Digi-Album and they are described as Profiles in this specification.

The receiving system MUST use MPV to process a PASS Digi-Album. Different directory structures are allowed primarily to allow different legacy architectures in the originating systems.

PASS also places the following general restrictions on the manifest file:

- The manifest files must be encoded according to UTF-8.
- (TBD)

## *6.2 File system*

DVD applications will use the UDF file system. CDs require the ISO 9660 file system.

In general the file system is constrained by the media type. In many cases it is possible to have redundant file systems on a given medium to enhance interchangeability among systems.

This is likely to be the in order to keep high compatibility with future consumer electronics (CE). However, current other file systems such as ISO9660, Juliet, HFS and so on are also allowed permitted when required by a specific media type.

## *6.3 The Recommended Directory Structure*

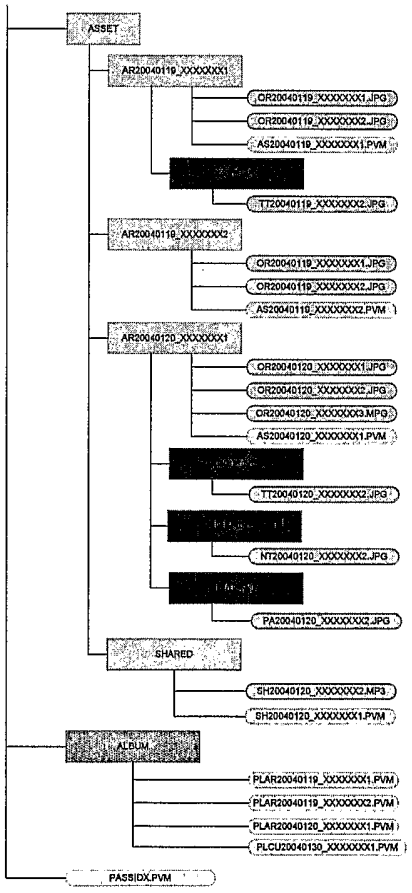
The use of MPV manifest permits a PASS Digi-Album to have multiple directory structures. This specification describes particular directory structures, each particular structure being a Profile.

This specification defines a "Recommended Profile" that describes a directory structure that is recommended for future PASS applications.

### 6.3.1 Graphic of Recommended Directory Structure

The PASS Specifications Recommended Directory Structure that the following diagram highlights.

Figure 2: Recommended Directory Structure




### 6.3.2 Naming Conventions for the Recommended Directory Structure

The Recommended Directory Structure has several naming conventions for its components

### *6.3.2.1 PASS Index Manifest File*

The name of the PASS Index Manifest file shall be PASSIDX.PVM

### *6.3.2.2 ASSET Directory*

When a Digi-Album uses the PASS Recommended Directory Structure this directory shall have the fixed name of ASSET.

### *6.3.2.3 Asset Roll Directory*

When the PASS Recommended Directory Structure is used, the Asset Roll Directory shall have a name that begins with the fixed characters "AR" followed by YYYMMDD_XXXXXXXX where YYYY corresponds to the Year using characters "0 through 9", MM is the number of month, DD is the number of the day of the month, each using characters "0 through 9". The character "_" is fixed, and "XXXXXXXX" is an eight character GUID called a Truncated Universal Identifier component (TUID), using "0-9" and "A-Z".

The date component, YYYMMDD, should correspond to the latest (most recent) of all the assets in the Asset Roll Directory. If by some reason the Asset Roll directory is empty, the date component should correspond to the creation date of that Asset Roll directory.

The Truncated Universal Identifier component (TUID), XXXXXXXX, should be generated at the time of directory creation. When initially creating an Asset Roll Directory, if there is an Asset Roll directory with the same date component, a new TUID a should be generated by incrementing to the largest TUID among Asset Roll directories having the same date. When the Asset Roll directory is migrated there is a possibility that more than one Asset Roll directories will have the same date component and TUID because of multiple migrations. In this case a new TUID should be generated by the originating system so that no Asset Roll directory with the same date component has the same TUID.

### *6.3.2.4 PASS Asset File*

When the PASS Recommended Directory Structure is used, the PASS Asset Files in the Asset Roll Directory shall have a name that begins with the fixed characters "OR" followed by YYYMMDD_XXXXXXXX where YYYY corresponds to the Year using characters "0 through 9", MM is the number of month, DD is the number of the day of the month, each using characters "0 through 9". The character "_" is fixed, and "XXXXXXXX" is an eight character GUID called a Truncated Universal Identifier component (TUID), using "0-9" and "A-Z".

The date component, YYYMMDD, should correspond to the date extracted from the EXIF Tag or if the file format contains to Tag, then the file creation date should be used.

The Truncated Universal Identifier component (TUID), XXXXXXXX, should be generated at the time of file creation by an originating system. If there is a PASS Asset File ("OR" Prefix) with the same date component, a new TUID should be generated by incrementing to the largest TUID among PASS Asset Files having the same date. When the Asset Roll directory is migrated there is a possibility that more than one PASS Asset File will have the same date component and TUID because of multiple migrations. In this case a new TUID should be generated by the originating system so that no PASS Asset File with the same date component has the same TUID.

### *6.3.2.5 Asset List Manifest*

When the PASS Recommended Directory Structure is used, the PASS ASSET List Manifest File shall have a name that begins with the characters "AS" and has a date component and a TUID that is the same as the Asset Roll Directory.

### *6.3.2.6 ALBUM Directory*

In the Recommended Directory Structure this directory shall have one permitted name; ALBUM

### *6.3.2.7 Default Play List Manifest Files*

In the Recommended Directory Structure the Default Play List Manifest files that are generated for each Asset Roll directory shall have a file name that begins with the characters "PL" and the remaining characters shall be equal to the name of the Asset Roll directory that corresponds to that default playlist manifest.

### *6.3.2.8 Custom Playlist Manifest Files*

In the Recommended Directory Structure the Custom Play List Manifest files that are generated shall have a file name that begins with the characters "PLCU" and the remaining characters shall have a date component, YYYMMDD, corresponding to the creation date of the custom playlist. After the date component is the character "_" followed by a Truncated Universal Identifier component (TUID).

The TUID, XXXXXXXX, should be generated at the time of file creation by an originating system. If there is another custom playlist manifest file with the date component, a new TUID should be generated by incrementing to the largest TUID among custom playlist manifest files having the same date. When there is migration there is a possibility that more than one PASS Asset File will have the same date component and TUID because of multiple migrations. In this case a new TUID should be generated by the originating system so that no custom playlist manifest file with the same date component has the same TUID.

### *6.3.2.9 SHARED Directory*

In the Recommended Directory Structure this directory shall have one permitted name, SHARED.

### *6.3.2.10 Shared Asset File*

When the PASS Recommended Directory Structure is used, the Asset files in the SHARED Directory shall have the file name SHYYYYMMDD_XXXXXXXX.ZZZ and the Asset List Manifest File shall have a file name of SHYYYYMMDD_XXXXXXXX.PVM. All files begin with the fixed characters "SH" followed by YYYMMDD_XXXXXXXX where YYYY corresponds to the Year using characters "0 through 9", MM is the number of month, DD is the number of the day of the month, each using characters "0 through 9". The character "_" is fixed, and "XXXXXXXX" is an eight character GUID using "0-9" and "A-Z". PASS restricts the use to uppercase in the Recommended Directory Structure. "ZZZ" depends on the format of the file.

The date component, YYYMMDD, should correspond to the date extracted from the EXIF Tag or if the file format contains to Tag, then the file creation date should be used.

The Truncated Universal Identifier component (TUID), XXXXXXXX, should be generated at the time of file creation by an originating system. If there is a PASS Shared Asset File ("SH" Prefix) with the same

date component, a new TUID should be generated by incrementing to the largest TUID among PASS Shared Asset Files having the same date. When the SHARED directory is migrated there is a possibility that more than one PASS Shared Asset File will have the same date component and TUID because of multiple migrations. In this case a new TUID should be generated by the originating system so that no PASS Shared Asset File with the same date component has the same TUID.

*6.3.2.11 Shared Asset List Manifest*

When the PASS Recommended Directory Structure is used, the PASS Shared Asset List Manifest File shall have a name that begins with the characters "SH" and has a date component that corresponds to the creation date of the Digi-Album and a TUID that is generated from that creation date.

### 6.3.3 The Recommended Directory Structure has the corresponding MPV Manifest files.

*6.3.3.1 Index Manifest - PASSIDX.PVM*

```
<?xml version="1.0" encoding="UTF-8"?>
<file:Manifest xmlns:file="http://ns.osta.org/manifest/1.0/" xmlns:mpvp="http://ns.osta.org/mpv/presentation/1.0/"
xmlns:nmf="http://ns.osta.org/nmf/1.0/" xmlns:pass="http://ns.pass.org/pass/1.0/"
xmlns:mpv="http://ns.osta.org/mpv/1.0/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://ns.pass.org/pass/1.0/
../strict/profiles/pass.xsd">
    <nmf:Metadata>
        <ManifestProperties xmlns="http://ns.osta.org/manifest/1.0/">
            <ProfileBag>
                <Profile>http://ns.osta.org/mpv/basic/1.0/</Profile>
                <Profile>http://ns.osta.org/mpv/presentation/1.0/</Profile>
                <Profile>http://ns.pass.org/pass/1.0/</Profile>
            </ProfileBag>
        </ManifestProperties>
        <Properties xmlns="http://purl.org/dc/elements/1.1/">
            <title>PASS Digi-Album</title>
        </ManifestProperties>
    </nmf:Metadata>
```

(TBD) TC needs to discuss migration issues

```
    <!-- PASS General Info Metadata -->
    <mpv:Metadata>
        <pass:generalInformation>
            <pass:mediumID>PASS_MEDIUMID_TEST100</pass:mediumID>
            <pass:specificationVersion> PASS_Version_1.0</pass:specificationVersion>
            <pass:originator>PASS-Editor v0.0</pass:originator>
            <pass:mediaLabel>My travel pictures.</pass:mediaLabel>
        </pass:generalInformation>
    </mpv:Metadata>

    <!-- PASS Migration Metadata -->
    <mpv:Metadata>
        <pass:inheritedInfo>
        <pass:generalInformation>
            <pass:mediumID>PASS_MEDIUMID_TEST100</pass:mediumID>
            <pass:specificationVersion> PASS_Version_1.0</pass:specificationVersion>
            <pass:originator>PASS-Editor v0.0</pass:originator>
            <pass:mediaLabel>My travel pictures.</pass:mediaLabel>
        </pass:generalInformation>
        </pass:inheritedInfo>
    </mpv:Metadata>
```

```
<!-- Index Album Location [OPTIONAL, should there be a global default playlist?]-->
<mpvp:Album mpv:id="ID010000">
    <nmf:Metadata>
        <Properties xmlns="http://purl.org/dc/elements/1.1/">
            <date>2004-10-29T10:00:00+09:00</date>
            <title>My travel pictures.</title>
        </Properties>
    </nmf:Metadata>
    <mpvp:Foreground>
        <mpvp:AlbumRef mpv:manifestLinkIDRef="ID000100" mpv:idRef="ID010000"/>
        <mpvp:AlbumRef mpv:manifestLinkIDRef="ID000200" mpv:idRef="ID010000"/>
        <mpvp:AlbumRef mpv:manifestLinkIDRef="ID000600" mpv:idRef="ID010000"/>
        <mpvp:AlbumRef mpv:manifestLinkIDRef="ID000700" mpv:idRef="ID010000"/>
        <mpv:ManifestLinkRef mpv:idRef="ID000300"/>
        <mpv:ManifestLinkRef mpv:idRef="ID000400"/>
        <mpv:ManifestLinkRef mpv:idRef="ID000500"/>
        <mpv:ManifestLinkRef mpv:idRef="ID000800"/>
    </mpvp:Foreground>
</mpvp:Album>

<!-- Asset List -->
<mpv:AssetList>

<!--Link to Default Manifest PLAR20040119_XXXXXXX1.PVM -->
    <mpv:ManifestLink mpv:id="ID000100">
        <mpv:LastURL mpv:filesystem="UDF">ALBUM/PLAR20040119_XXXXXXX1.PVM</mpv:LastURL>
        <nmf:Metadata>
            <Properties xmlns="http://purl.org/dc/elements/1.1/">
                <title>MyTravel Album.</title>
            </Properties>
        </nmf:Metadata>
    </mpv:ManifestLink>

<!--Link to Default Manifest PLAR20040119_XXXXXXX2.PVM -->
    <mpv:ManifestLink mpv:id="ID000200">
        <mpv:LastURL mpv:filesystem="UDF">ALBUM/PLAR20040119_XXXXXXX1.PVM</mpv:LastURL>
        <nmf:Metadata>
            <Properties xmlns="http://purl.org/dc/elements/1.1/">
                <title>My Weekend</title>
            </Properties>
        </nmf:Metadata>
    </mpv:ManifestLink>

<!--Link to Default Manifest PLAR20040120_XXXXXXX1.PVM -->
    <mpv:ManifestLink mpv:id="ID000600">
        <mpv:LastURL mpv:filesystem="UDF">ALBUM/PLAR20040120_XXXXXXX1.PVM</mpv:LastURL>
        <nmf:Metadata>
            <Properties xmlns="http://purl.org/dc/elements/1.1/">
                <title>My Vacation</title>
            </Properties>
        </nmf:Metadata>
    </mpv:ManifestLink>

<!--Link to Default Manifest PLCU20040130_XXXXXXX1.PVM -->
    <mpv:ManifestLink mpv:id="ID000700">
        <mpv:LastURL mpv:filesystem="UDF">ALBUM/PLCU20040130_XXXXXXX1.PVM</mpv:LastURL>
        <nmf:Metadata>
            <Properties xmlns="http://purl.org/dc/elements/1.1/">
                <title>My Custom Slide Show</title>
            </Properties>
        </nmf:Metadata>
    </mpv:ManifestLink>

<!--Link to Asset Manifest AS20040119_XXXXXXX1.PVM -->
    <mpv:ManifestLink mpv:id="ID000300">
```

```
            <mpv:LastURL mpv:filesystem="UDF">ASSET/AR200401019_XXXXXXX1.pvm</mpv:LastURL>
            <nmf:Metadata>
                <Properties xmlns="http://purl.org/dc/elements/1.1/">
                    <title>Asset List for AR200401019_XXXXXXX1</title>
                </Properties>
            </nmf:Metadata>
        </mpv:ManifestLink>

    <!--Link to Asset Manifest AS20040119_XXXXXXX2.PVM -->
        <mpv:ManifestLink mpv:id="ID000400">
            <mpv:LastURL mpv:filesystem="UDF"> ASSET/AR200401019_XXXXXXX2.pvm </mpv:LastURL>
            <nmf:Metadata>
                <Properties xmlns="http://purl.org/dc/elements/1.1/">
                    <title>Asset List for AR200401019_XXXXXXX2</title>
                </Properties>
            </nmf:Metadata>
        </mpv:ManifestLink>

    <!--Link to Asset Manifest AS20040120_XXXXXXX1.PVM -->
        <mpv:ManifestLink mpv:id="ID000500">
            <mpv:LastURL mpv:filesystem="UDF"> ASSET/AR200401020_XXXXXXX1.pvm </mpv:LastURL>
            <nmf:Metadata>
                <Properties xmlns="http://purl.org/dc/elements/1.1/">
                    <title>Asset List for AR200401020_XXXXXXX1</title>
                </Properties>
            </nmf:Metadata>
        </mpv:ManifestLink>

    <!--Link to Asset Manifest SH20040120_XXXXXXX1.PVM -->
        <mpv:ManifestLink mpv:id="ID000800">
            <mpv:LastURL mpv:filesystem="UDF"> SHARED/SH200401020_XXXXXXX1.pvm </mpv:LastURL>
            <nmf:Metadata>
                <Properties xmlns="http://purl.org/dc/elements/1.1/">
                    <title>Asset List for SHARED Directory</title>
                </Properties>
            </nmf:Metadata>
        </mpv:ManifestLink>

    </mpv:AssetList>
</file:Manifest>
```

### *6.3.3.2 Default Playlist Manifest - PLAR20040119_XXXXXXX1.PVM*

```
<?xml version="1.0" encoding="UTF-8"?>
<file:Manifest xmlns:file="http://ns.osta.org/manifest/1.0/" xmlns:mpvp="http://ns.osta.org/mpv/presentation/1.0/"
xmlns:nmf="http://ns.osta.org/nmf/1.0/" xmlns:pass="http://ns.pass.org/pass/1.0/"
xmlns:mpv="http://ns.osta.org/mpv/1.0/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://ns.pass.org/pass/1.0/../../strict/profiles/pass.xsd">
    <nmf:Metadata>
        <ManifestProperties xmlns="http://ns.osta.org/manifest/1.0/">
            <ProfileBag>
                <Profile>http://ns.osta.org/mpv/basic/1.0/</Profile>
                <Profile>http://ns.osta.org/mpv/presentation/1.0/</Profile>
            </ProfileBag>
        </ManifestProperties>
    </nmf:Metadata>

    <!--Default Playlist PLAR20040119_XXXXXXX1.PVM described -->
    <mpvp:Album mpv:id="ID010000">
        <nmf:Metadata>
```

```
            <Properties xmlns="http://purl.org/dc/elements/1.1/">
                <date>2004-10-29T10:00:00+09:00</date>
                <title>My Travel Album.</title>
            </Properties>
        </nmf:Metadata>

    <!--Default Slide Show for AR20040119_XXXXXXX1described -->
        <mpvp:Foreground>
            <nmf:Metadata>
                <ControlProperties xmlns="http://ns.osta.org/mpv/presentation/1.0/Control/">
                    <BackgroundColor>Blue</BackgroundColor>
                    <Dur>3.0</Dur>
                    <Fit>meet</Fit>
                    <TransitionFilter>
                        <TransitionFilterProperties xmlns="http://ns.osta.org/mpv/presentation/1.0/TransitionFilter/">
                            <Type>barWipe</Type>
                        </TransitionFilterProperties>
                    </TransitionFilter>
                </ControlProperties>
            </nmf:Metadata>

    <!--First Asset for AR20040119_XXXXXXX1described -->
            <mpv:StillRef mpv:manifestLinkIDRef="ID000100" mpv:idRef="ID000100">
                <nmf:Metadata>
                    <ControlProperties xmlns="http://ns.osta.org/mpv/presentation/1.0/Control/">
                        <Fit>hidden</Fit>
                        <TransitionFilter>
                            <TransitionFilterProperties xmlns="http://ns.osta.org/mpv/presentation/1.0/TransitionFilter/">
                                <Type>irisWipe</Type>
                            </TransitionFilterProperties>
                        </TransitionFilter>
                    </ControlProperties>
                </nmf:Metadata>
            </mpv:StillRef>

    <!--Second Asset for AR20040119_XXXXXXX1described -->
            <mpv:StillRef mpv:manifestLinkIDRef="ID000100" mpv:idRef="ID000200">
                <nmf:Metadata>
                    <ControlProperties xmlns="http://ns.osta.org/mpv/presentation/1.0/Control/">
                        <TransitionFilter>
                            <TransitionFilterProperties xmlns="http://ns.osta.org/mpv/presentation/1.0/TransitionFilter/">
                                <Type>clockWipe</Type>
                            </TransitionFilterProperties>
                        </TransitionFilter>
                    </ControlProperties>
                </nmf:Metadata>
            </mpv:StillRef>
        </mpvp:Foreground>
    </mpvp:Album>

    <!-- Asset List -->
    <mpv:AssetList>

        <!-- Asset List Manifest Link -->
        <mpv:ManifestLink mpv:id="ID000100">
            <mpv:LastURL
mpv:filesystem="UDF">../ASSET/AR20040119_XXXXXXX1/AS20040119_XXXXXXX1.PVM</mpv:LastURL>
            <nmf:Metadata>
                <Properties xmlns="http://purl.org/dc/elements/1.1/">
                    <title>Snap shot</title>
                </Properties>
            </nmf:Metadata>
        </mpv:ManifestLink>

    </mpv:AssetList>
</file:Manifest>
```

### *6.3.3.3 Default Playlist Manifest - PLAR20040119_XXXXXXX2.PVM*

```
<?xml version="1.0" encoding="UTF-8"?>
<file:Manifest xmlns:file="http://ns.osta.org/manifest/1.0/" xmlns:mpvp="http://ns.osta.org/mpv/presentation/1.0/"
xmlns:nmf="http://ns.osta.org/nmf/1.0/" xmlns:pass="http://ns.pass.org/pass/1.0/"
xmlns:mpv="http://ns.osta.org/mpv/1.0/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://ns.pass.org/pass/1.0/../../strict/profiles/pass.xsd">
    <nmf:Metadata>
        <ManifestProperties xmlns="http://ns.osta.org/manifest/1.0/">
            <ProfileBag>
                <Profile>http://ns.osta.org/mpv/basic/1.0/</Profile>
                <Profile>http://ns.osta.org/mpv/presentation/1.0/</Profile>
            </ProfileBag>
        </ManifestProperties>
    </nmf:Metadata>

    <!--Default Playlist PLAR20040119_XXXXXXX2.PVM described -->
    <mpvp:Album mpv:id="ID010000">
        <nmf:Metadata>
            <Properties xmlns="http://purl.org/dc/elements/1.1/">
                <date>2004-10-29T10:00:00+09:00</date>
                <title>My Weekend</title>
            </Properties>
        </nmf:Metadata>

    <!--Default Slide Show for AR20040119_XXXXXXX2 described -->
        <mpvp:Foreground>
            <nmf:Metadata>
                <ControlProperties xmlns="http://ns.osta.org/mpv/presentation/1.0/Control/">
                    <BackgroundColor>Blue</BackgroundColor>
                    <Dur>3.0</Dur>
                    <Fit>meet</Fit>
                    <TransitionFilter>
                        <TransitionFilterProperties xmlns="http://ns.osta.org/mpv/presentation/1.0/TransitionFilter/">
                            <Type>barWipe</Type>
                        </TransitionFilterProperties>
                    </TransitionFilter>
                </ControlProperties>
            </nmf:Metadata>

    <!--First Asset for AR20040119_XXXXXXX2 described -->
            <mpv:StillRef mpv:manifestLinkIDRef="ID000100" mpv:idRef="ID000100">
                <nmf:Metadata>
                    <ControlProperties xmlns="http://ns.osta.org/mpv/presentation/1.0/Control/">
                        <Fit>hidden</Fit>
                        <TransitionFilter>
                            <TransitionFilterProperties xmlns="http://ns.osta.org/mpv/presentation/1.0/TransitionFilter/">
                                <Type>irisWipe</Type>
                            </TransitionFilterProperties>
                        </TransitionFilter>
                    </ControlProperties>
                </nmf:Metadata>
            </mpv:StillRef>

    <!--Second Asset for AR20040119_XXXXXXX2 described -->
            <mpv:StillRef mpv:manifestLinkIDRef="ID000100" mpv:idRef="ID000200">
                <nmf:Metadata>
                    <ControlProperties xmlns="http://ns.osta.org/mpv/presentation/1.0/Control/">
                        <TransitionFilter>
                            <TransitionFilterProperties xmlns="http://ns.osta.org/mpv/presentation/1.0/TransitionFilter/">
                                <Type>clockWipe</Type>
```

```
                        </TransitionFilterProperties>
                    </TransitionFilter>
                </ControlProperties>
            </nmf:Metadata>
        </mpv:StillRef>
    </mpvp:Foreground>
</mpvp:Album>

<!-- Asset List -->
<mpv:AssetList>

    <!-- Asset List Manifest Link -->
    <mpv:ManifestLink mpv:id="ID000100">
        <mpv:LastURL
mpv:filesystem="UDF">../ASSET/AR20040119_XXXXXXX2/AS20040119_XXXXXXX2.PVM</mpv:LastURL>
        <nmf:Metadata>
            <Properties xmlns="http://purl.org/dc/elements/1.1/">
                <title>Snap shot</title>
            </Properties>
        </nmf:Metadata>
    </mpv:ManifestLink>

</mpv:AssetList>
</file:Manifest>
```

### *6.3.3.4 Default Playlist Manifest - PLAR20040120_XXXXXXX1.PVM*

```
<?xml version="1.0" encoding="UTF-8"?>
<file:Manifest xmlns:file="http://ns.osta.org/manifest/1.0/" xmlns:mpvp="http://ns.osta.org/mpv/presentation/1.0/"
xmlns:nmf="http://ns.osta.org/nmf/1.0/" xmlns:pass="http://ns.pass.org/pass/1.0/"
xmlns:mpv="http://ns.osta.org/mpv/1.0/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://ns.pass.org/pass/1.0/../../strict/profiles/pass.xsd">
    <nmf:Metadata>
        <ManifestProperties xmlns="http://ns.osta.org/manifest/1.0/">
            <ProfileBag>
                <Profile>http://ns.osta.org/mpv/basic/1.0/</Profile>
                <Profile>http://ns.osta.org/mpv/presentation/1.0/</Profile>
            </ProfileBag>
        </ManifestProperties>
    </nmf:Metadata>

    <!--Default Playlist PLAR20040120_XXXXXXX1.PVM described -->
    <mpvp:Album mpv:id="ID010000">
        <nmf:Metadata>
            <Properties xmlns="http://purl.org/dc/elements/1.1/">
                <date>2004-10-29T10:00:00+09:00</date>
                <title>My Vacation</title>
            </Properties>
        </nmf:Metadata>

    <!--Default Slide Show for AR20040120_XXXXXXX1described -->
        <mpvp:Foreground>
            <nmf:Metadata>
                <ControlProperties xmlns="http://ns.osta.org/mpv/presentation/1.0/Control/">
                    <BackgroundColor>Blue</BackgroundColor>
                    <Dur>3.0</Dur>
                    <Fit>meet</Fit>
                    <TransitionFilter>
                        <TransitionFilterProperties xmlns="http://ns.osta.org/mpv/presentation/1.0/TransitionFilter/">
                            <Type>barWipe</Type>
```

```
                    </TransitionFilterProperties>
                </TransitionFilter>
            </ControlProperties>
        </nmf:Metadata>

    <!--First Asset for AR20040120_XXXXXXX1 described-->
        <mpv:StillRef mpv:manifestLinkIDRef="ID000100" mpv:idRef="ID000100">
            <nmf:Metadata>
                <ControlProperties xmlns="http://ns.osta.org/mpv/presentation/1.0/Control/">
                    <Fit>hidden</Fit>
                    <TransitionFilter>
                        <TransitionFilterProperties xmlns="http://ns.osta.org/mpv/presentation/1.0/TransitionFilter/">
                            <Type>irisWipe</Type>
                        </TransitionFilterProperties>
                    </TransitionFilter>
                </ControlProperties>
            </nmf:Metadata>
        </mpv:StillRef>

    <!--Second Asset for AR20040120_XXXXXXX1 described-->
        <mpv:StillRef mpv:manifestLinkIDRef="ID000100" mpv:idRef="ID000200">
            <nmf:Metadata>
                <ControlProperties xmlns="http://ns.osta.org/mpv/presentation/1.0/Control/">
                    <TransitionFilter>
                        <TransitionFilterProperties xmlns="http://ns.osta.org/mpv/presentation/1.0/TransitionFilter/">
                            <Type>clockWipe</Type>
                        </TransitionFilterProperties>
                    </TransitionFilter>
                </ControlProperties>
            </nmf:Metadata>
        </mpv:StillRef>
    </mpvp:Foreground>
</mpvp:Album>

<!-- Asset List -->
<mpv:AssetList>

    <!-- Asset List Manifest Link -->
    <mpv:ManifestLink mpv:id="ID000100">
        <mpv:LastURL
mpv:filesystem="UDF">../ASSET/AR20040120_XXXXXXX1/AS20040120_XXXXXXX1.PVM</mpv:LastURL>
        <nmf:Metadata>
            <Properties xmlns="http://purl.org/dc/elements/1.1/">
                <title>Snap shot</title>
            </Properties>
        </nmf:Metadata>
    </mpv:ManifestLink>

</mpv:AssetList>
</file:Manifest>
```

### *6.3.3.5 Custom Playlist Manifest - PLCU20040130_XXXXXXX1.PVM*

```
<?xml version="1.0" encoding="UTF-8"?>
<file:Manifest xmlns:file="http://ns.osta.org/manifest/1.0/" xmlns:mpvp="http://ns.osta.org/mpv/presentation/1.0/"
xmlns:nmf="http://ns.osta.org/nmf/1.0/" xmlns:pass="http://ns.pass.org/pass/1.0/"
xmlns:mpv="http://ns.osta.org/mpv/1.0/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://ns.pass.org/pass/1.0/../../strict/profiles/pass.xsd">
    <nmf:Metadata>
        <ManifestProperties xmlns="http://ns.osta.org/manifest/1.0/">
```

```
            <ProfileBag>
                <Profile>http://ns.osta.org/mpv/basic/1.0/</Profile>
                <Profile>http://ns.osta.org/mpv/presentation/1.0/</Profile>
            </ProfileBag>
        </ManifestProperties>
    </nmf:Metadata>

    <!--Custom Playslist -->
    <mpvp:Album mpv:id="ID080000">
        <nmf:Metadata>
            <Properties xmlns="http://purl.org/dc/elements/1.1/">
                <date>2004-10-29T10:00:00+09:00</date>
                <title>My travel album.</title>
            </Properties>
        </nmf:Metadata>

    <!--Background Music for Custom Slide Show -->
        <mpvp:Background>
            <mpv:AudioRef mpv:manifestLinkIDRef="ID000400" mpv:idRef="ID000100"/>
        </mpvp:Background>

    <!--Custom Slide Show -->
        <mpvp:Foreground>
            <nmf:Metadata>
                <ControlProperties xmlns="http://ns.osta.org/mpv/presentation/1.0/Control/">
                    <BackgroundColor>Blue</BackgroundColor>
                    <Dur>3.0</Dur>
                    <Fit>meet</Fit>
                    <TransitionFilter>
                        <TransitionFilterProperties
xmlns="http://ns.osta.org/mpv/presentation/1.0/TransitionFilter/">
                            <Type>barWipe</Type>
                        </TransitionFilterProperties>
                    </TransitionFilter>
                </ControlProperties>
            </nmf:Metadata>

    <!--First Asset of Custom Slide Show -->
            <mpv:StillRef mpv:manifestLinkIDRef="ID000100" mpv:idRef="ID000100"/>

    <!--Second Asset of Custom Slide Show -->
            <mpv:StillRef mpv:manifestLinkIDRef="ID000100" mpv:idRef="ID000200">
                <nmf:Metadata>
                    <ControlProperties xmlns="http://ns.osta.org/mpv/presentation/1.0/Control/">
                        <Fit>hidden</Fit>
                        <TransitionFilter>
                            <TransitionFilterProperties
xmlns="http://ns.osta.org/mpv/presentation/1.0/TransitionFilter/">
                                <Type>irisWipe</Type>
                            </TransitionFilterProperties>
                        </TransitionFilter>
                    </ControlProperties>
                </nmf:Metadata>
            </mpv:StillRef>

    <!--Third Asset of Custom Slide Show -->
            <mpv:StillRef mpv:manifestLinkIDRef="ID000200" mpv:idRef="ID000100">
                <nmf:Metadata>
                    <ControlProperties xmlns="http://ns.osta.org/mpv/presentation/1.0/Control/">
                        <TransitionFilter>
                            <TransitionFilterProperties
xmlns="http://ns.osta.org/mpv/presentation/1.0/TransitionFilter/">
                                <Type>clockWipe</Type>
                            </TransitionFilterProperties>
                        </TransitionFilter>
                    </ControlProperties>
```

```
                </nmf:Metadata>
            </mpv:StillRef>

    <!--Fourth Asset of Custom Slide Show -->
            <mpv:StillRef mpv:manifestLinkIDRef="ID000200" mpv:idRef="ID000200">
                <nmf:Metadata>
                    <ControlProperties xmlns="http://ns.osta.org/mpv/presentation/1.0/Control/">
                        <TransitionFilter>
                            <TransitionFilterProperties
xmlns="http://ns.osta.org/mpv/presentation/1.0/TransitionFilter/">
                                <Type>snakeWipe</Type>
                            </TransitionFilterProperties>
                        </TransitionFilter>
                    </ControlProperties>
                </nmf:Metadata>
            </mpv:StillRef>

    <!--Fifth Asset of Custom Slide Show -->
            <mpv:StillRef mpv:manifestLinkIDRef="ID000300" mpv:idRef="ID000100"/>

    <!--Sixth Asset of Custom Slide Show -->
            <mpv:StillRef mpv:manifestLinkIDRef="ID000300" mpv:idRef="ID000200"/>

    <!--Seventh Asset of Custom Slide Show -->
            <mpv:VideoRef mpv:manifestLinkIDRef="ID000300" mpv:idRef="ID000300"/>

        </mpvp:Foreground>
    </mpvp:Album>

    <!-- Asset List for Custom Slide Show -->
    <mpv:AssetList>

        <!-- Asset List Manifest Link -->
        <mpv:ManifestLink mpv:id="ID000100">
            <mpv:LastURL
mpv:filesystem="UDF">../ASSET/AR20040119_XXXXXXX1/AS20040119_XXXXXXX1.PVM</mpv:LastURL>
            <nmf:Metadata>
                <Properties xmlns="http://purl.org/dc/elements/1.1/">
                    <title>Asset List for AR20040119_XXXXXXX1</title>
                </Properties>
            </nmf:Metadata>
        </mpv:ManifestLink>

        <!-- Asset List Manifest Link -->
        <mpv:ManifestLink mpv:id="ID000200">
            <mpv:LastURL
mpv:filesystem="UDF">../ASSET/AR20040119_XXXXXXX2/AS20040119_XXXXXXX2.PVM</mpv:LastURL>
            <nmf:Metadata>
                <Properties xmlns="http://purl.org/dc/elements/1.1/">
                    <title> Asset List for AR20040119_XXXXXXX2</title>
                </Properties>
            </nmf:Metadata>
        </mpv:ManifestLink>

        <!-- Asset List Manifest Link -->
        <mpv:ManifestLink mpv:id="ID000300">
            <mpv:LastURL
mpv:filesystem="UDF">../ASSET/AR20040120_XXXXXXX1/AS20040120_XXXXXXX1.PVM </mpv:LastURL>
            <nmf:Metadata>
                <Properties xmlns="http://purl.org/dc/elements/1.1/">
                    <title> Asset List for AR20040120_XXXXXXX1</title>
                </Properties>
            </nmf:Metadata>
        </mpv:ManifestLink>

        <!-- Asset List Manifest Link -->
```

```
        <mpv:ManifestLink mpv:id="ID000400">
            <mpv:LastURL mpv:filesystem="UDF">../SHARED/SH20040120_XXXXXXX1.PVM</mpv:LastURL>
            <nmf:Metadata>
                <Properties xmlns="http://purl.org/dc/elements/1.1/">
                    <title>Asset List for SHARED Directory</title>
                </Properties>
            </nmf:Metadata>
        </mpv:ManifestLink>
    </mpv:AssetList>
</file:Manifest>
```

### *6.3.3.6 Asset Roll Manifest - AS20040119_XXXXXXX1.PVM*

```
<?xml version="1.0" encoding="UTF-8"?>
<file:Manifest xmlns:file="http://ns.osta.org/manifest/1.0/" xmlns:mpvp="http://ns.osta.org/mpv/presentation/1.0/"
xmlns:nmf="http://ns.osta.org/nmf/1.0/" xmlns:pass="http://ns.pass.org/pass/1.0/"
xmlns:mpv="http://ns.osta.org/mpv/1.0/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://ns.pass.org/pass/1.0/../../../strict/profiles/pass.xsd">
    <nmf:Metadata>
        <ManifestProperties xmlns="http://ns.osta.org/manifest/1.0/">
            <ProfileBag>
                <Profile>http://ns.osta.org/mpv/basic/1.0/</Profile>
                <Profile>http://ns.osta.org/mpv/presentation/1.0/</Profile>
            </ProfileBag>
        </ManifestProperties>
    </nmf:Metadata>

    <!-- Asset List for AR20040119_XXXXXXX1 -->
    <mpv:AssetList>
```

(TBD)

```
    <!-- PASS Migration Metadata, This is not necessary if only entire Digi-Albums are migrated -->
    <mpv:Metadata>
        <pass:inheritedInfo>
        <pass:generalInformation>
            <pass:mediumID>PASS_MEDIUMID_TEST100</pass:mediumID>
            <pass:specificationVersion> PASS_Version_1.0</pass:specificationVersion>
            <pass:originator>PASS-Editor v0.0</pass:originator>
            <pass:mediaLabel>My travel pictures.</pass:mediaLabel>
        </pass:generalInformation>
        </pass:inheritedInfo>
    </mpv:Metadata>

        <!--Still Image -->
        <mpv:Still mpv:id="ID000100">
            <mpv:ContentID>urn:osta-org:mpv:dsig:md5:all:0847190882a007ed34462a466d365ce2</mpv:ContentID>
            <mpv:LastURL mpv:filesystem="UDF">OR20040119_XXXXXXX1.JPG</mpv:LastURL>
            <mpv:Metadata mpv:schemaURI="http://www.digitalimaging.org/dig35/1.1/xml">
                <METADATA xmlns="http://www.digitalimaging.org/dig35/1.1/xml">
                    <BASIC_IMAGE_PARAM>
                        <BASIC_IMAGE_INFO>
                            <IMAGE_SIZE>
                                <WIDTH>1536</WIDTH>
                                <HEIGHT>1024</HEIGHT>
                            </IMAGE_SIZE>
                        </BASIC_IMAGE_INFO>
                    </BASIC_IMAGE_PARAM>
                </METADATA>
```

```
            </mpv:Metadata>
            <nmf:Metadata>
                <Properties xmlns="http://purl.org/dc/elements/1.1/">
                    <date>2001-05-14T16:05:23</date>
                    <format>image/jpeg</format>
                    <title>Chapel</title>
                </Properties>
            </nmf:Metadata>
        </mpv:Still>

        <!--Still Image -->
        <mpv:Still mpv:id="ID000200">
            <mpv:ContentID>urn:osta-org:mpv:dsig:md5:all:c3f2ac53d62b814b320cd446b561bd33</mpv:ContentID>
            <mpv:LastURL mpv:filesystem="UDF">OR20040119_XXXXXXX2.JPG </mpv:LastURL>
            <mpv:Metadata mpv:schemaURI="http://www.digitalimaging.org/dig35/1.1/xml">
                <METADATA xmlns="http://www.digitalimaging.org/dig35/1.1/xml">
                    <BASIC_IMAGE_PARAM>
                        <BASIC_IMAGE_INFO>
                            <IMAGE_SIZE>
                                <WIDTH>1536</WIDTH>
                                <HEIGHT>1024</HEIGHT>
                            </IMAGE_SIZE>
                        </BASIC_IMAGE_INFO>
                    </BASIC_IMAGE_PARAM>
                </METADATA>
            </mpv:Metadata>
            <nmf:Metadata>
                <Properties xmlns="http://purl.org/dc/elements/1.1/">
                    <date>2001-05-14T16:08:40</date>
                    <format>image/jpeg</format>
                    <title>Green</title>
                </Properties>
            </nmf:Metadata>
            <mpv:Rendition mpv:renditionUsage="PC">
                <mpv:StillRef mpv:idRef="ID000201"/>
            </mpv:Rendition>
        </mpv:Still>

        <!--PC Rendition of Still Image -->
        </mpv:Still>
        <mpv:Still mpv:id="ID000201">
            <mpv:ContentID>urn:osta-
org:mpv:dsig:md5:all:8356669746891257a20fdb38ccf9eeab</mpv:ContentID>
            <mpv:LastURL mpv:filesystem="UDF">DISPLAY/TT20040119_XXXXXXX2.JPG </mpv:LastURL>
            <mpv:Metadata mpv:schemaURI="http://www.digitalimaging.org/dig35/1.1/xml">
                <METADATA xmlns="http://www.digitalimaging.org/dig35/1.1/xml">
                    <BASIC_IMAGE_PARAM>
                        <BASIC_IMAGE_INFO>
                            <IMAGE_SIZE>
                                <WIDTH>600</WIDTH>
                                <HEIGHT>400</HEIGHT>
                            </IMAGE_SIZE>
                        </BASIC_IMAGE_INFO>
                    </BASIC_IMAGE_PARAM>
                </METADATA>
            </mpv:Metadata>
            <nmf:Metadata>
                <Properties xmlns="http://purl.org/dc/elements/1.1/">
                    <date>2001-05-14T16:08:40</date>
                    <format>image/jpeg</format>
                    <title>2001-05-14T16:08:40</title>
                </Properties>
            </nmf:Metadata>
        </mpv:Still>

    </mpv:AssetList>
```

```
</file:Manifest>
```

### *6.3.3.7 Asset Roll Manifest - AS20040119_XXXXXXX2.PVM*

```
<?xml version="1.0" encoding="UTF-8"?>
<file:Manifest xmlns:file="http://ns.osta.org/manifest/1.0/" xmlns:mpvp="http://ns.osta.org/mpv/presentation/1.0/"
xmlns:nmf="http://ns.osta.org/nmf/1.0/" xmlns:pass="http://ns.pass.org/pass/1.0/"
xmlns:mpv="http://ns.osta.org/mpv/1.0/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://ns.pass.org/pass/1.0/../../../strict/profiles/pass.xsd">
    <nmf:Metadata>
        <ManifestProperties xmlns="http://ns.osta.org/manifest/1.0/">
            <ProfileBag>
                <Profile>http://ns.osta.org/mpv/basic/1.0/</Profile>
                <Profile>http://ns.osta.org/mpv/presentation/1.0/</Profile>
            </ProfileBag>
        </ManifestProperties>
    </nmf:Metadata>

    <!-- Asset List for AR20040119_XXXXXXX2 -->
    <mpv:AssetList>
```

(TBD)

```
    <!-- PASS Migration Metadata, This is not necessary if only entire Digi-Albums are migrated -->
    <mpv:Metadata>
        <pass:inheritedInfo>
        <pass:generalInformation>
            <pass:mediumID>PASS_MEDIUMID_TEST100</pass:mediumID>
            <pass:specificationVersion> PASS_Version_1.0</pass:specificationVersion>
            <pass:originator>PASS-Editor v0.0</pass:originator>
            <pass:mediaLabel>My travel pictures.</pass:mediaLabel>
        </pass:generalInformation>
        </pass:inheritedInfo>
    </mpv:Metadata>

        <!--Still Image -->
        <mpv:Still mpv:id="ID000100">
            <mpv:ContentID>urn:osta-org:mpv:dsig:md5:all:0847196882a007ed34462a466d367ce8</mpv:ContentID>
            <mpv:LastURL mpv:filesystem="UDF">OR20040119_XXXXXXX1.JPG</mpv:LastURL>
            <mpv:Metadata mpv:schemaURI="http://www.digitalimaging.org/dig35/1.1/xml">
                <METADATA xmlns="http://www.digitalimaging.org/dig35/1.1/xml">
                    <BASIC_IMAGE_PARAM>
                        <BASIC_IMAGE_INFO>
                            <IMAGE_SIZE>
                                <WIDTH>1536</WIDTH>
                                <HEIGHT>1024</HEIGHT>
                            </IMAGE_SIZE>
                        </BASIC_IMAGE_INFO>
                    </BASIC_IMAGE_PARAM>
                </METADATA>
            </mpv:Metadata>
            <nmf:Metadata>
                <Properties xmlns="http://purl.org/dc/elements/1.1/">
                    <date>2001-05-14T16:05:23</date>
                    <format>image/jpeg</format>
                    <title>Chapel</title>
                </Properties>
            </nmf:Metadata>
            <mpv:Rendition mpv:renditionUsage="screen">
```

```
            <mpv:StillRef mpv:idRef="ID000101"/>
        </mpv:Rendition>
    </mpv:Still>

    <!--Still Image -->
    <mpv:Still mpv:id="ID000200">
        <mpv:ContentID>urn:osta-org:mpv:dsig:md5:all:d3f2zc59d92b514b370cd446b561fq34</mpv:ContentID>
        <mpv:LastURL mpv:filesystem="UDF">OR20040119_XXXXXXX2.JPG </mpv:LastURL>
        <mpv:Metadata mpv:schemaURI="http://www.digitalimaging.org/dig35/1.1/xml">
            <METADATA xmlns="http://www.digitalimaging.org/dig35/1.1/xml">
                <BASIC_IMAGE_PARAM>
                    <BASIC_IMAGE_INFO>
                        <IMAGE_SIZE>
                            <WIDTH>1536</WIDTH>
                            <HEIGHT>1024</HEIGHT>
                        </IMAGE_SIZE>
                    </BASIC_IMAGE_INFO>
                </BASIC_IMAGE_PARAM>
            </METADATA>
        </mpv:Metadata>
        <nmf:Metadata>
            <Properties xmlns="http://purl.org/dc/elements/1.1/">
                <date>2001-05-14T16:08:40</date>
                <format>image/jpeg</format>
                <title>Green</title>
            </Properties>
        </nmf:Metadata>

</mpv:AssetList>
</file:Manifest>
```

### *6.3.3.8 Asset Roll Manifest - AS20040120_XXXXXXX1.PVM*

```
<?xml version="1.0" encoding="UTF-8"?>
<file:Manifest xmlns:file="http://ns.osta.org/manifest/1.0/" xmlns:mpvp="http://ns.osta.org/mpv/presentation/1.0/"
xmlns:nmf="http://ns.osta.org/nmf/1.0/" xmlns:pass="http://ns.pass.org/pass/1.0/"
xmlns:mpv="http://ns.osta.org/mpv/1.0/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://ns.pass.org/pass/1.0/../../../strict/profiles/pass.xsd">
    <nmf:Metadata>
        <ManifestProperties xmlns="http://ns.osta.org/manifest/1.0/">
            <ProfileBag>
                <Profile>http://ns.osta.org/mpv/basic/1.0/</Profile>
                <Profile>http://ns.osta.org/mpv/presentation/1.0/</Profile>
            </ProfileBag>
        </ManifestProperties>
    </nmf:Metadata>

    <!-- Asset List for AR20040120_XXXXXXX1 -->
    <mpv:AssetList>


(TBD)

    <!-- PASS Migration Metadata This is not necessary if only entire Digi-Albums are migrated.-->
    <mpv:Metadata>
        <pass:inheritedInfo>
        <pass:generalInformation>
            <pass:mediumID>PASS_MEDIUMID_TEST100</pass:mediumID>
            <pass:specificationVersion> PASS_Version_1.0</pass:specificationVersion>
            <pass:originator>PASS-Editor v0.0</pass:originator>
            <pass:mediaLabel>My travel pictures.</pass:mediaLabel>
        </pass:generalInformation>
        </pass:inheritedInfo>
```

```
</mpv:Metadata>

    <!--Still Image -->
    <mpv:Still mpv:id="ID000100">
        <mpv:ContentID>urn:osta-org:mpv:dsig:md5:all:0a47w50882a098ed34462a466d3z56e3</mpv:ContentID>
        <mpv:LastURL mpv:filesystem="UDF">OR20040120_XXXXXXX1.JPG</mpv:LastURL>
        <mpv:Metadata mpv:schemaURI="http://www.digitalimaging.org/dig35/1.1/xml">
            <METADATA xmlns="http://www.digitalimaging.org/dig35/1.1/xml">
                <BASIC_IMAGE_PARAM>
                    <BASIC_IMAGE_INFO>
                        <IMAGE_SIZE>
                            <WIDTH>1536</WIDTH>
                            <HEIGHT>1024</HEIGHT>
                        </IMAGE_SIZE>
                    </BASIC_IMAGE_INFO>
                </BASIC_IMAGE_PARAM>
            </METADATA>
        </mpv:Metadata>
        <nmf:Metadata>
            <Properties xmlns="http://purl.org/dc/elements/1.1/">
                <date>2001-06-14T16:05:23</date>
                <format>image/jpeg</format>
                <title>Dog Show</title>
            </Properties>
        </nmf:Metadata>
    </mpv:Still>

    <!--Still Image -->
    <mpv:Still mpv:id="ID000200">
        <mpv:ContentID>urn:osta-org:mpv:dsig:md5:all:2wf2ac53d3n5814b320cd4db8z617d33</mpv:ContentID>
        <mpv:LastURL mpv:filesystem="UDF">OR20040120_XXXXXXX2.JPG </mpv:LastURL>
        <mpv:Metadata mpv:schemaURI="http://www.digitalimaging.org/dig35/1.1/xml">
            <METADATA xmlns="http://www.digitalimaging.org/dig35/1.1/xml">
                <BASIC_IMAGE_PARAM>
                    <BASIC_IMAGE_INFO>
                        <IMAGE_SIZE>
                            <WIDTH>1536</WIDTH>
                            <HEIGHT>1024</HEIGHT>
                        </IMAGE_SIZE>
                    </BASIC_IMAGE_INFO>
                </BASIC_IMAGE_PARAM>
            </METADATA>
        </mpv:Metadata>
        <nmf:Metadata>
            <Properties xmlns="http://purl.org/dc/elements/1.1/">
                <date>2001-06-14T16:08:40</date>
                <format>image/jpeg</format>
                <title>Model</title>
            </Properties>
        </nmf:Metadata>
        <mpv:Rendition mpv:renditionUsage="PC">
            <mpv:StillRef mpv:idRef="ID000201"/>
        </mpv:Rendition>
        <mpv:Rendition mpv:renditionUsage="NTSC">
            <mpv:StillRef mpv:idRef="ID000202"/>
        </mpv:Rendition>
        <mpv:Rendition mpv:renditionUsage="PAL">
            <mpv:StillRef mpv:idRef="ID000203"/>
        </mpv:Rendition>
    </mpv:Still>

    <!--Video File -->
    <mpv:Video mpv:id="ID000300">
        <mpv:ContentID>urn:osta-org:mpv:dsig:md5:all:5w47w5az82a09rg574462a4xjk3z509p</mpv:ContentID>
        <mpv:LastURL mpv:filesystem="UDF">OR20040120_XXXXXXX3.MPG</mpv:LastURL>
            <Properties xmlns="http://purl.org/dc/elements/1.1/">
```

```
                <date>2001-06-14T16:05:23</date>
                <format>video/mpeg</format>
                <title>My Movie</title>
            </Properties>
        </nmf:Metadata>
    </mpv:Video>

    <!--PC Rendition of Still Image -->
    </mpv:Still>
    <mpv:Still mpv:id="ID000201">
        <mpv:ContentID>urn:osta-
org:mpv:dsig:md5:all:8353hsi5kl491257a20fdb38ccf9eeab</mpv:ContentID>
        <mpv:LastURL mpv:filesystem="UDF">DISPLAY/TT20040119_XXXXXXX2.JPG </mpv:LastURL>
        <mpv:Metadata mpv:schemaURI="http://www.digitalimaging.org/dig35/1.1/xml">
            <METADATA xmlns="http://www.digitalimaging.org/dig35/1.1/xml">
                <BASIC_IMAGE_PARAM>
                    <BASIC_IMAGE_INFO>
                        <IMAGE_SIZE>
                            <WIDTH>600</WIDTH>
                            <HEIGHT>400</HEIGHT>
                        </IMAGE_SIZE>
                    </BASIC_IMAGE_INFO>
                </BASIC_IMAGE_PARAM>
            </METADATA>
        </mpv:Metadata>
        <nmf:Metadata>
            <Properties xmlns="http://purl.org/dc/elements/1.1/">
                <date>2001-05-14T16:08:40</date>
                <format>image/jpeg</format>
                <title>2001-05-14T16:08:40</title>
            </Properties>
        </nmf:Metadata>
    </mpv:Still>

    <!--PC Rendition of Still Image -->
    </mpv:Still>
    <mpv:Still mpv:id="ID000202">
        <mpv:ContentID>urn:osta-org:mpv:dsig:md5:all:1fk48si5kl491257a20fdb38cc82jdp4</mpv:ContentID>
        <mpv:LastURL mpv:filesystem="UDF">DISPLAY/NT20040119_XXXXXXX2.JPG </mpv:LastURL>
        <mpv:Metadata mpv:schemaURI="http://www.digitalimaging.org/dig35/1.1/xml">
            <METADATA xmlns="http://www.digitalimaging.org/dig35/1.1/xml">
                <BASIC_IMAGE_PARAM>
                    <BASIC_IMAGE_INFO>
                        <IMAGE_SIZE>
                            <WIDTH>600</WIDTH>
                            <HEIGHT>400</HEIGHT>
                        </IMAGE_SIZE>
                    </BASIC_IMAGE_INFO>
                </BASIC_IMAGE_PARAM>
            </METADATA>
        </mpv:Metadata>
        <nmf:Metadata>
            <Properties xmlns="http://purl.org/dc/elements/1.1/">
                <date>2001-05-14T16:08:40</date>
                <format>image/jpeg</format>
                <title>2001-05-14T16:08:40</title>
            </Properties>
        </nmf:Metadata>
    </mpv:Still>

    <!--PC Rendition of Still Image -->
    </mpv:Still>
    <mpv:Still mpv:id="ID000203">
        <mpv:ContentID>urn:osta-
org:mpv:dsig:md5:all:g453hsi5kl4914kido5mq838ccf9eeab</mpv:ContentID>
        <mpv:LastURL mpv:filesystem="UDF">DISPLAY/PA20040119_XXXXXXX2.JPG </mpv:LastURL>
```

```
            <mpv:Metadata mpv:schemaURI="http://www.digitalimaging.org/dig35/1.1/xml">
                <METADATA xmlns="http://www.digitalimaging.org/dig35/1.1/xml">
                    <BASIC_IMAGE_PARAM>
                        <BASIC_IMAGE_INFO>
                            <IMAGE_SIZE>
                                <WIDTH>600</WIDTH>
                                <HEIGHT>400</HEIGHT>
                            </IMAGE_SIZE>
                        </BASIC_IMAGE_INFO>
                    </BASIC_IMAGE_PARAM>
                </METADATA>
            </mpv:Metadata>
            <nmf:Metadata>
                <Properties xmlns="http://purl.org/dc/elements/1.1/">
                    <date>2001-05-14T16:08:40</date>
                    <format>image/jpeg</format>
                    <title>2001-05-14T16:08:40</title>
                </Properties>
            </nmf:Metadata>
        </mpv:Still>

    </mpv:AssetList>
</file:Manifest>
```

### *6.3.3.9 Shared Directory Manifest - SH20040120_XXXXXXX1.PVM*

```
<?xml version="1.0" encoding="UTF-8"?>
<file:Manifest xmlns:file="http://ns.osta.org/manifest/1.0/" xmlns:mpvp="http://ns.osta.org/mpv/presentation/1.0/"
xmlns:nmf="http://ns.osta.org/nmf/1.0/" xmlns:pass="http://ns.pass.org/pass/1.0/"
xmlns:mpv="http://ns.osta.org/mpv/1.0/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://ns.pass.org/pass/1.0/../../../strict/profiles/pass.xsd">
    <nmf:Metadata>
        <ManifestProperties xmlns="http://ns.osta.org/manifest/1.0/">
            <ProfileBag>
                <Profile>http://ns.osta.org/mpv/basic/1.0/</Profile>
                <Profile>http://ns.osta.org/mpv/presentation/1.0/</Profile>
            </ProfileBag>
        </ManifestProperties>
    </nmf:Metadata>

    <!-- Asset List for SHARED Directory-->
    <mpv:AssetList>

        <!--Audio Asset -->
        <mpv:Video mpv:id="ID000100">
            <mpv:LastURL mpv:filesystem="UDF">SHARED/SH20040120_XXXXXXX2.MP3</mpv:LastURL>
            <nmf:Metadata>
                <Properties xmlns="http://purl.org/dc/elements/1.1/">
                    <date>2000-01-01T00:00:00</date>
                    <format>audio/mpeg</format>
                    <title>BGM01</title>
                </Properties>
            </nmf:Metadata>
        </mpv:Audio>

    </mpv:AssetList>
</file:Manifest>
```

# 7 Media Type Specific Components *(This section is under development)*

This section will describe any special files or constraints that are needed for specific media types. For example CDs use ISO 9660 and DVDs use UDF. CDs have special extensions needed to support Macintosh Computers.

## *7.1 DVD ROM, Recordable, Rewritable*

The file structure on DVD media is typically compliant with the Universal Data Format (UDF) Specification maintained by the Optical Storage Technology Association (OSTA). The UDF specification is a specific embodiment of the ECMA-167 standard entitled "Volume and File Structure for Write-Once and Rewritable Media using Non-Sequential Recording for Information Interchange". All DVD-Video discs are mastered to contain all required data as specified by ECMA-167 (2nd edition) and UDF 1.02.

In practice, most DVD media also incorporate the file structure specified by the ISO 9660 standard ("Information processing – Volume and file structure of CD-ROM for information interchange"). If a disc contains both UDF and ISO 9660 file systems, then it is known as a UDF Bridge disc. According to the UDF version 2.50 document, consumer DVD players shall only support UDF and not ISO 9660. However, the presence of the ISO 9660 file structure on a DVD disc does not degrade its playability in a consumer DVD player.

The UDF standard applies to forms of DVD media, ROM and recordable. It supports multisession recording. However, it is not clear that DVD players must recognize multisession media since there is no reference to multisession recording in UDF specification version 1.02.

## *7.2 CD ROM, Recordable, Rewritable*

The file structure on CD media is typically compliant with the ISO 9660 standard. Other file structures may be employed alone or in combination with the ISO 9660 structure, e.g. the Hierarchical File System (HFS) defined by Apple or the UDF file structure maintained by OSTA.

There are two extensions of the ISO 9660 file structure that address gaps in the standard. The Rock Ridge Interchange Protocol utilizes the System Use Sharing Protocol to record complete POSIX file system semantics in the System Use fields provided by the ISO 9660 standard. The Joliet specification addresses limitation in the ISO 9660 standard on character sets, file name lengths, directory tree depth and directory name format.

# Appendix A - Cross Reference to Legacy Directory and File Structures (Informative)

Description of Example PASS Legacy Systems and RDS

| Container | Picture CD | Fujicolor CD | HotAlbum | Recommended Directory Structure |
|---|---|---|---|---|
| AR Directory | /PICTURES<br>fixed | /DCIM/"ARD"<br>variable<br>00105B04 | /ASSET/"ARD"<br>variable<br>AR20050119_ABCDEFGH | /ASSET/"ARD"<br>variable<br>AR20050119_ABCDEFGH |
| Asset Directory | /PICTURES<br>fixed | /DCIM<br>fixed | /ASSET<br>fixed | /ASSET<br>fixed |
| Album Directory | /ALBUM<br>fixed | /ALBUM<br>fixed | /ALBUM<br>fixed | /ALBUM<br>fixed |
| Display Directory | /PICTURES/DISPLAY<br>fixed | /DCIM/"ARD"/LOWRES<br>fixed | /ASSET/"ARD"/SCREEN<br>fixed | /ASSET/"ARD"/DISPLAY<br>fixed |
| MPV Asset File | /pictures/"ASSET"<br>variable<br>001_1.jpg | /DCIM/"ARD"/"ASSET file"<br>variable<br>DH000001.jpg | /ASSET/"ARD"/"ASSET file"<br>variable<br>OR20050119_ABCDEFGH.jpg | /ASSET/"ARD"/"ASSET file"<br>variable<br>OR20050119_ABCDEFGH.jpg |

"ARD": AR Directory. Actural name is defined by each system
"ASSET": Asset Directory. Actural name is defined by each system
"ASSET file": PASS Asset File. Actural name is defined by each system
The Display directory is tentative

# Appendix B - Truncated UID (TUID) Algorithm

Step 1:

Obtain time information from system.

e.g. HH: MM: SS. CC

Here,

HH: hour (0-23)

MM: minute (0-59)

SS: second (0-59)

CC: sub-second (0-99)

Step 2:

Calculate time code

T = ((CC*60+SS)*60+MM)*24+HH

Note: The order is intentionally inverted because we use incremental numbers for asset filenames in an Asset Roll directory.

Step 3:

Obtain three bytes from MAC address (or any unique code)

M: 0-(256^6-1) [256]:[256]:[256]:[256]:[256]:[256] (1st - 6th)

Extract 3rd, 5th, and 6th bytes and combine them as follows:

$M = B_3*256*256+B_5*256+B_6$

Note 1: Another example of unique code would be "serial number of the device."

Note 2: $B_1$ - $B_3$: Manufacturer code, $B_4$ - $B_6$: Machine code. The idea here is to use both parts of manufacturer code and machine code. The byte number and order may be arbitrary.

Step 4:

Obtain the unique number.

N_TUID=mod( (T +M*Tmax), TUIDmax)

Where, TUIDmax = $36^8$, Tmax=24*60*60*100

Step 5:

Convert it into ASCII characters (0-9, A -Z)

(1) convert it to 36-based number. 36-based figure Di can be calculated by:

Di = mod(int(N_TUID/$36^i$), 36)

where,

Di: 36-based i-th digit number (0-7. here, LSB=0)

(2) convert Di into ASCII by the following table:

0: 0

1: 1

....

9: 9

10: A (or a)

11: B (or b)

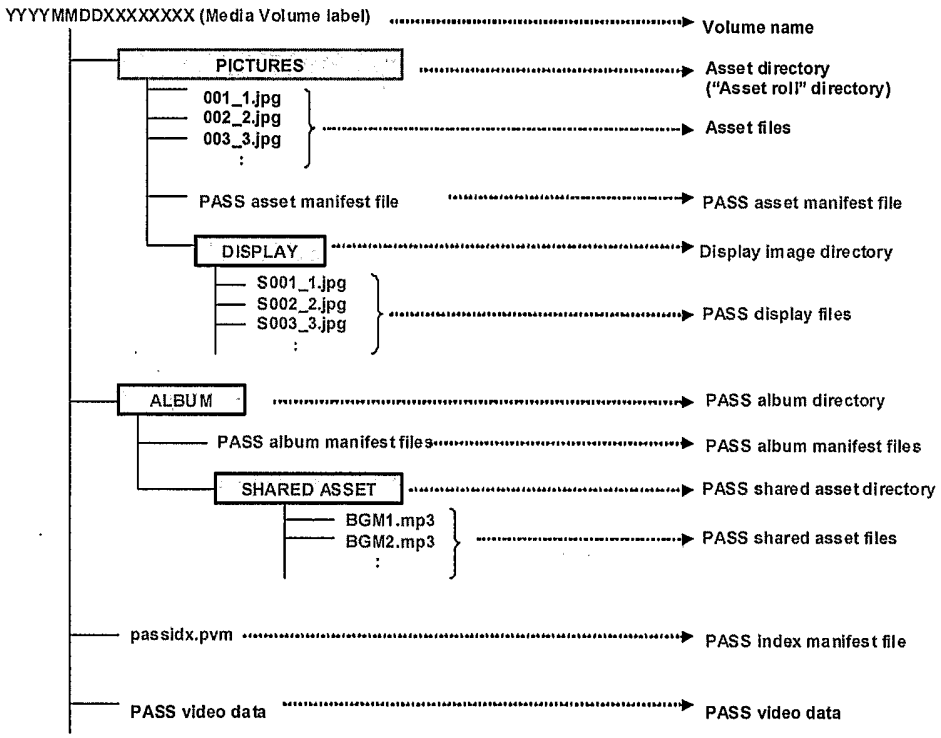
34: Y (or y)

35: Z (or z)

Note: The distinction of upper/lower case in alphabet is ignored for Windows.

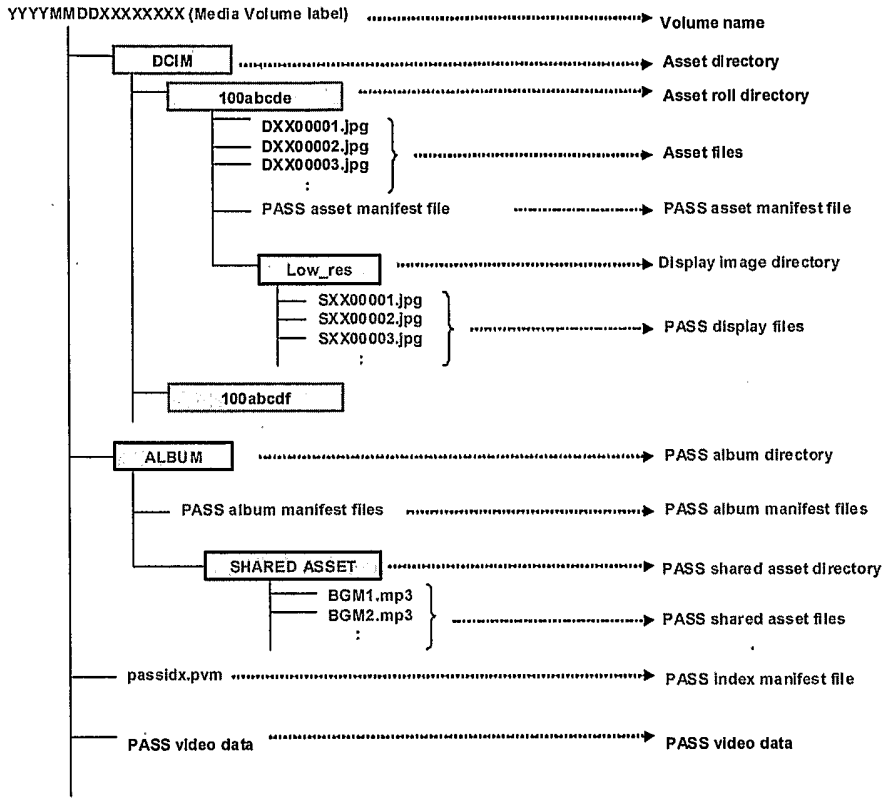
# Appendix C: The Kodak PictureCD Directory and File Structure (Informative)

***Example 1. for PASS file structure which is based on Kodak Picture CD***



# Appendix D: The Fuji Color CD Directory and File Structure (Informative)

***Example 2. for PASS file structure which is based on Fuji-color CD***




# Appendix E: The Konica Minolta Hot Album Directory and Files Structure (Informative)

The Portable Storage profile specifies a file system structure with a unified manner and a global unique ID naming convention. The root directory consists of ASSET and ALBUM directories as mandatory. The ASSET directory consists of any number of Asset Roll directories, and Album directory consists of any number of Album manifest files.

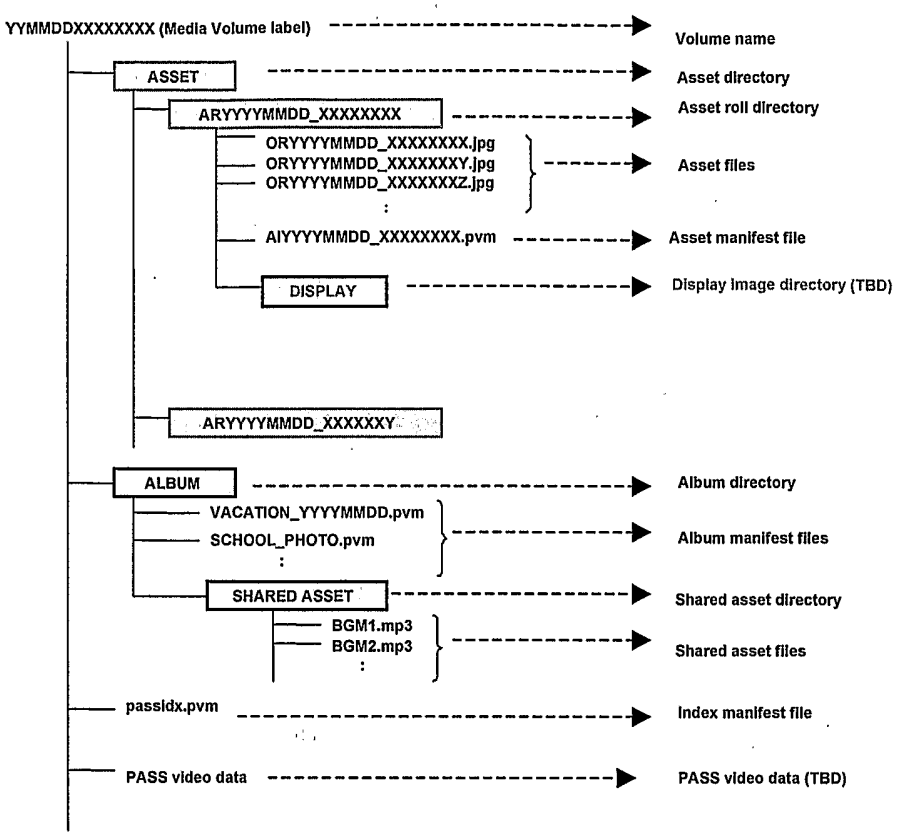



Figure 1. Illustration of general structure of Portable Storage file system

### *7.2.1.1 Asset directory*

The name of the asset directory shall be: "ASSET" (capital)

7.2.1.1.1 Asset Roll directory

Dozens of Asset files which are taken in a short period and/or in a nearby place with an AR information file should be stored in an Asset Roll directory as described in Section 6.3.2.

#### *7.2.1.1.1.1 Naming convention*

(1) New name

The name of Asset Roll directory consists of date and unique code as mandatory. The directory name starts with "AR" (capital), and is followed by year, month, day, underscore, unique code and optional characters.

ARyyyymmdd_uuuuuuuu_pppppp:

yyyy: year in 4 digits

mm: month in 2 digits

dd: day in 2 digits

_uuuuuuuu: 8-digit unique code (36-type ASCII: 0 - 9, a - z (or A-Z) )

_pppppp: Optional characters (Start with "_" (underscore) if there is. Three is no restriction for the number of characters as far as the total character is equal to or less than 255.)

The unique code shall be generated by using a seed number based on time information, such as "hhmmss.cc". If more than one directory is supposed to generated with the same date information, the late-generated directory has a bigger value in the unique code. Random code generator is not specified.

The date information can be assigned from one of the following guidelines:

a) Choose the last date of the assets in the directory were taken if the information is available.

b) If the date is unknown, or is believed to be unreliable, the date of digitization should be used instead.

c) If the date information is not exactly known, "00" (zero-zero) should be used for day and/or month.

The total number of directory name characters shall be equal to or less than 255.

(2) Renewal of the name

In case that the renewal of a directory name is necessary due to a conflict in a copying and modification process, the unique code shall be incremented until no conflict is found. The conflict shall be judged without the optional characters.

(original) ARyyyymmdd_uuuuuuuu

(renewed) ARyyyymmdd_vvvvvvvv

vvvvvvvv: Add one to the original "uuuuuuuu"

Example: "D0DE9RCT" will be "D0DE9RCU".

Note: If "vvvvvvvv" reached the upper limit ("zzzzzzzz"), it would start from "00000000".

*7.2.1.1.1.2 DISPLAY directory*

TBD.

7.2.1.1.2 Asset files

*7.2.1.1.2.1 Naming convention*

(1) New name

The name of an asset file is given in the same fashion. The file name starts with "OR" (capital. It stands for ORiginal), and is followed by year, month, date, underscore, and unique code.

ORyyyymmdd_uuuuuuuu_pppppp.ext:

yyyy: year in 4 digits

mm: month in 2 digits

dd: day in 2 digits

_uuuuuuuu: 8-digit unique code

_pppppp: Optional characters (Start with "_" (underscore) if there is. Three is no restriction for the number of characters as far as the total character is equal to or less than 255.)

ext: Extension name indicates the format of file

The unique code should be identical to the one used in the AR directory. If more than on file is stored with the same date information, the unique code shall be incremented in order. If it reaches to the upper limit ("zzzzzzzz"), the starting unique code can be chosen again.

(2) Renewal of the name

In case of the renewal of the Asset name due to editing, modify unique code by adding one until no conflict is found. Conflict shall be judged without optional characters.

(original) ORyyyymmdd_uuuuuuuu

(renewed) ORyyyymmdd_vvvvvvvv

vvvvvvvv: Add one to the original "uuuuuuuu"

If aaaaaaaa reaches the limit ("zzzzzzzz"), it starts from "00000000" until no conflict is found.

7.2.1.1.3 Asset manifest file

(1) Naming convention

The name of Asset manifest file shall be:

AIyyyymmdd_uuuuuuuu.pvm

yyyymmdd_uuuuuuuu: The identical code with the directory name

*7.2.1.2 Album directory*

The name of Album directory shall be:

"ALBUM" (capital)

7.2.1.2.1 Album manifest files

The name of Album manifest file is recommended to include the generation date and the unique code described in 7.3.4.1.1.1. For example, the file generated on July 22, 2004 will be:

"TripToCalfornia_040722uuuuuuuu.pvm"

7.2.1.2.2 Shared asset directory

TBD (Note: Common structure would be used)

# Appendix F: Optional Media Interchange Formats that can coexist on a PASS Disc (Informative)

Video data, whose format is available for playing by general-purpose DVD players and depends on the type of medium, should be encoded according to the specification corresponding to type of medium. A PASS originating system may optionally encode data in these media dependent formats.

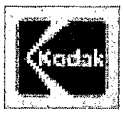
The on-disc structures described in this section are different ways of encoding the customer's assets on the recording medium. These formats are not part of PASS Version 1.0 and are out-of-scope.

The CD system also supports different data disc structures – CD-ROM (Mode 1) and CD-ROM XA (Mode 2 – Form 1 and 2). Although the disc structure and the file structure are for the most part independent, the use of the CD-ROM XA format place requirements on certain fields within the file structure. In particular,

- The Application Use field of the Primary Volume Descriptor must contain the CD-ROM XA label.
- All ISO 9960 Directory records must include in the System Use field the required CD-ROM XA Extension fields.

The ISO 9660 file structure is multisession compatible as per the Multisession Compact Disc Specification. All CD writers and readers manufactured since the early 1990s are multisession compatible.

APPENDIX A-2








# PICTURE ARCHIVING AND SHARING SYSTEM

## A Joint Initiative

*Konica-Minolta, Fuji Photo Film, Eastman Kodak*

*Version 0.80*

# Originating/Authoring System Requirements

Authors: M. Hara

Contributors:

Version 0.80

January 26, 2005

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# Revision History

| Version | Date | Author(s) | Description |
|---|---|---|---|
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| 0.20 | 11/30/04 | M.Hara | TOC update |
| DRAFT0.50 | 12/10/04 | M.Hara | Draft for Tokyo Mtg. |
| 0.60 | 1/11/05 | M.Hara | Draft for San Jose Mtg. |
| 0.80 | 1/26/05 | M.Hara | |

# 1 Overview

## *1.1 Purpose*

This document provides a detailed description of the requirements for PASS Originating/Authoring System that is compatible with the Picture Archive & Sharing System and creates PASS DigiAlbum. Refer to White Paper.

## *1.2 Audience*

This document is intended to be read by PASS media service providers or implementors of PASS media creating systems which include Kiosk, mini-Lab or PC applications.

## *1.3 What is PASS?*

PASS stands for Picture Archive and Sharing S. The goal of this system is to create a set of open standards for the consumer imaging industry aimed at the preservation of digital photos and motion images. The purpose of this standard is to ensure that a consumer's digital memories are not lost to future generations. The embodiment of these standards will take the form of the *PASS* format, a method for storing pictures, motion images and related content. Disks authored with the PASS format shall be referred to as *DigiAlbums*. The goals of this format are:

(1) To define the requirements of authoring, playback, and print enablement for a new generation of products and services
(2) To provide interoperability amongst those systems
(3) To better meet the consumer's desire to easily store, share, and print by using these products and services.

## *1.4 Dictionary of Terms and Acronyms*

<The working drafts will reference an external Glossary document>

## *1.5 Referenced Documents*

- PASS Logical Disc Specification(LDS)
- PASS System Requirements specification
- PASS Receiving/Playback System Requirements
- PASS Authoring System Software Development Kit developer's manual

# 2 System Overview

## *2.1 Major unified features of PASS*

There are the following major unified features of PASS picked up(Fig.1):

*1) Easy playing on Consumer Electronics(CE)*

Easy playing photo slide show without stress by existing DVD players and PASS supported DVD players

*2) Easy print ordering on TV*

Check slide No. on TV and write down it on an ordering sheet.
Easy print ordering at shop will be done by bringing such ordering sheet and PASS digi-Album.

*3) Easy print ordering on any Print Kiosks*

Available for print ordering from any PASS digi-Album at any PASS supported Print Kiosks

*4) Easy photo retrieve*

Available for easy retrieve of images by date and any keywords

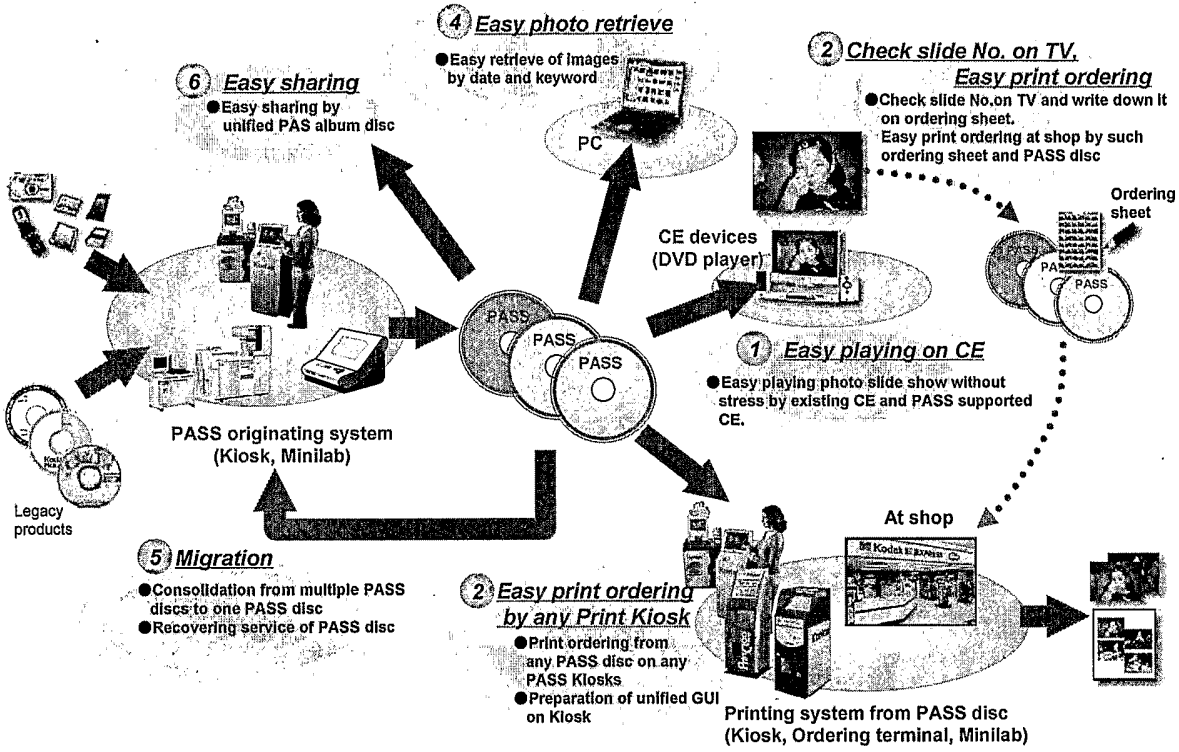
*5) Safe migration*

Available for consolidation from multiple PASS digi-Albums to one PASS digi-Album with migration of history of photo

*6) Easy sharing*

Available for easy image sharing by unified PASS digi-Albums.

**Fig.1. Unified PASS Features**




## 2.2 *System Overview*

The PASS system is made up of the following major systems and components;

1) Originating system

Originating systems creating PASS discs, has the following functions typically;

a) Collect user's data on various media, and convert them to PASS compliant formats on PASS discs.
b) Collect or generate metadata(date, keyword,...) for user's images on PASS discs.
c) Create digital albums on PASS discs, as slideshows playable on CE devices.
d) Migrate multiple PASS discs to new one, over and over generations.
e) Create video segment as option which is playable on existing DVD player.

2) Receiving system

Receiving system has the following functions mainly;

a) Check ASSET format
b) Read and interpret PASS MANIFEST files

Receiving system shall include Playback component or Printing component.

3) Playback component

Playback component in Receiving system has the following functions mainly;

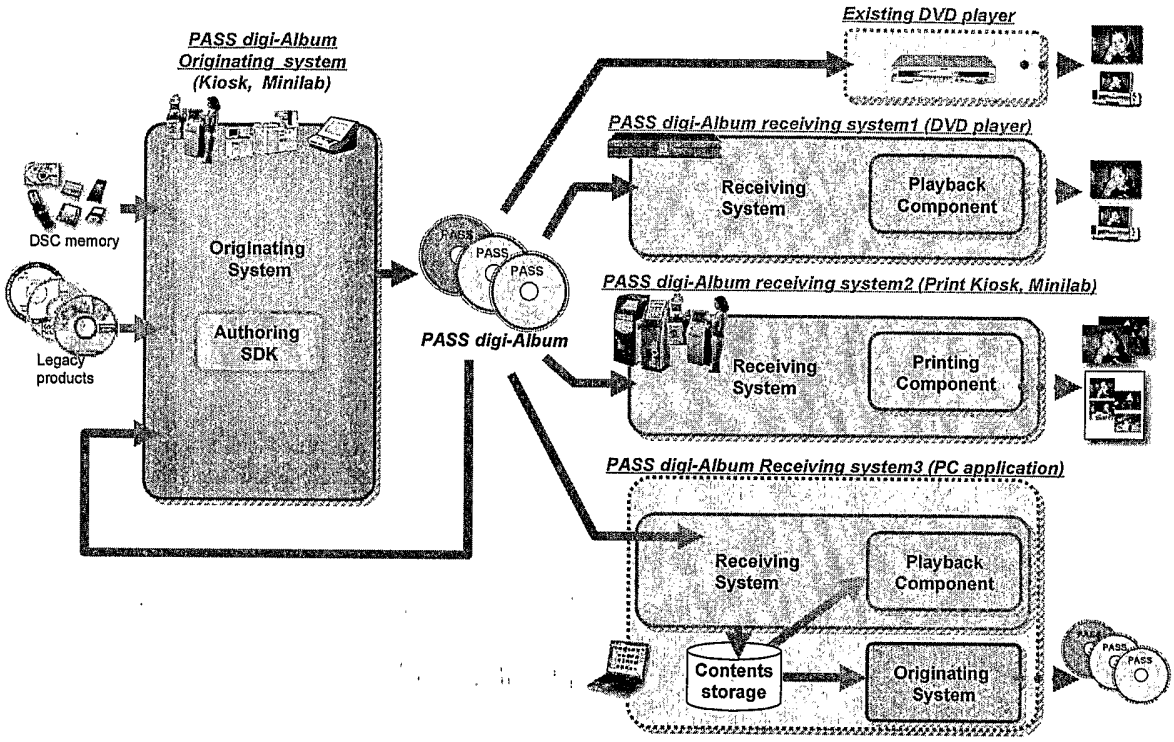
a) Display ASSETs according to PASS MANIFEST.
b) Select album from multiple PASS PLAYLIST MANIFEST
c) Display ASSETs retrieved by date and keywords as optional functions

5) Printing component

Printing component in Receiving component has the following functions mainly;

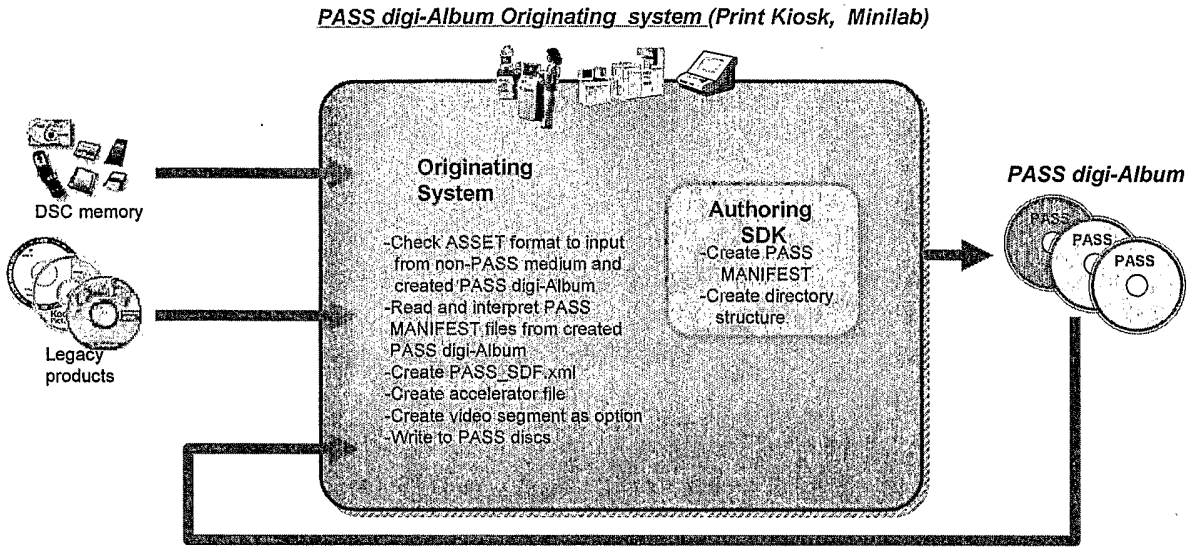
a) Select ASSETs for print
b) Print selected ASSETs

***Structure of Originating, Authoring, Receiving, Playback and Print component***

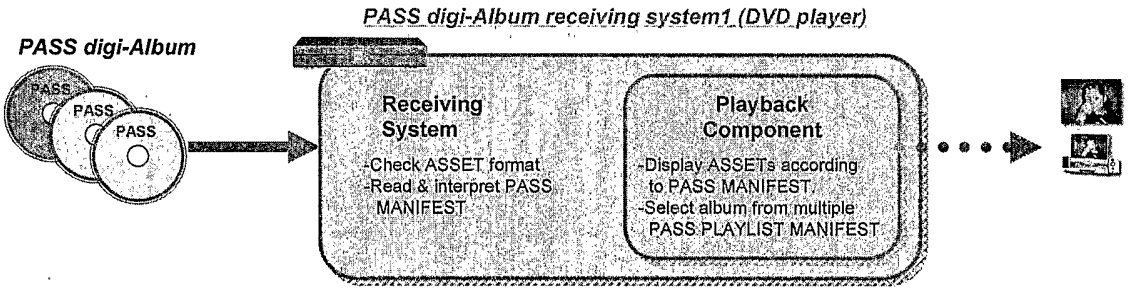


## 2.3 *Example systems*

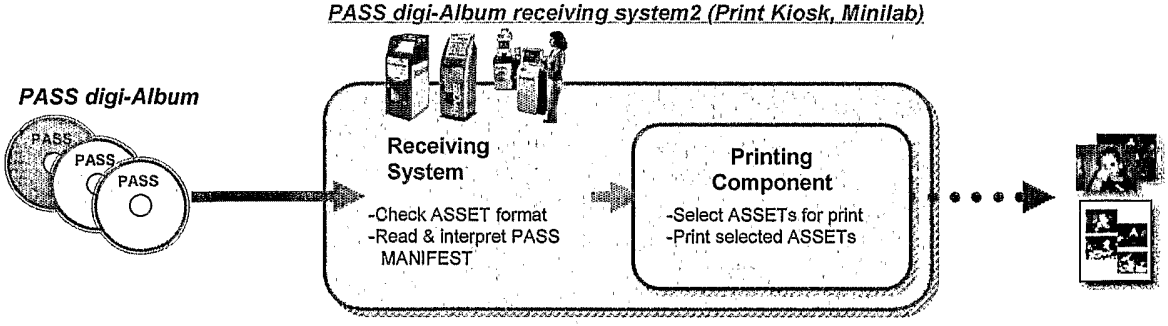
### *1) PASS digi-Album Originating system (Kiosk, Minilab)*



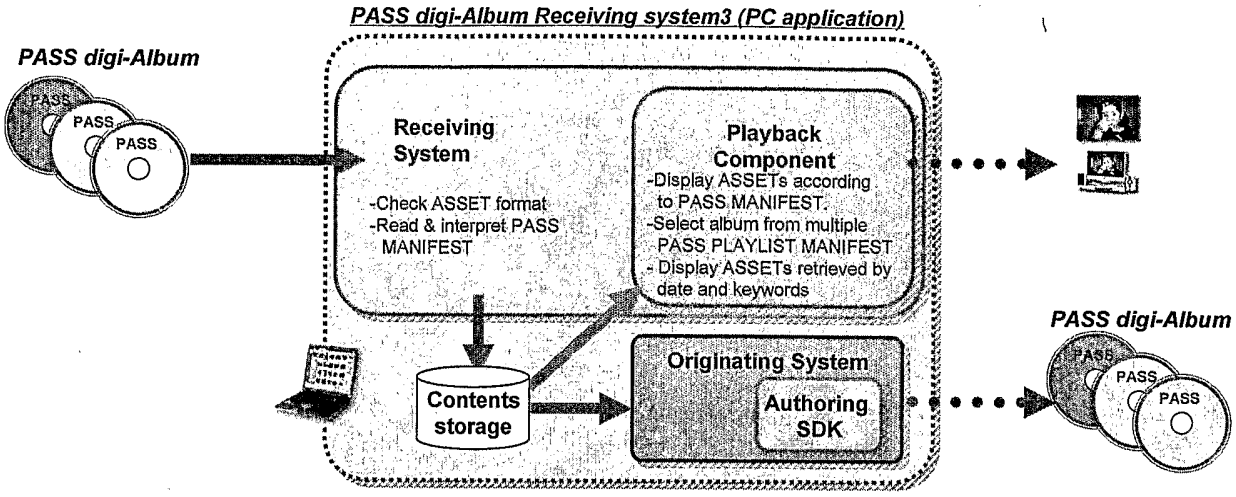

### *2) PASS digi-Album Receiving system1 (DVD players)*




### *3) PASS digi-Album Receiving system2 (Print Kiosks, Minilab)*



*4)PASS digi-Album Receiving system4 (PC application for PASS)*




## 3 PASS Originating/Authoring System Overview

Originating/Authoring Systems represent the application systems that create DigiAlbums. They can take on many forms such as Mini-lab systems, Kiosks, or PC applications with reader hardwares for reading image data, etc., and with writer hardware capable of writing DigiAlbums as defined by the *PASS Logical Disk Specification* (LDS).

Originating/Authoring Systems responsible for handling the following functions:

- Collecting, reading and temporally storing image files, movie files or music files as assets. There are many different types of input, such as flash memory cards from digital still camera (DSC), scanner input from traditional films or prints, optical disk and so on.
- Encoding or transcoding assets into PASS compliant formats (Ex. Exif2.2, MP3, ...)
- Collecting or generating *Metadata*(date, title, ...). It is desirable for *Originating/Authoring Systems* to provide the ability to fill in *Metadata* such as who, what, when, and where of a scene. This and other information are then used to support downstream content organization and enhance the output experience. There are several different types of metadata source. In such a case as DSC still image, it is possible to automatically extract some metadata from Exif tags. In other case such as titles of assets or albums, it is required to manually input metadata to the systems. For such a case, some alternative methods are defined in this document, in order to decrease manually inputting load.
- Determining what assets are to be placed on the media and where. Consequently, determining directory/file structure of the medium, structure and description of control files including *AssetList Manifest* file which contains asset file locations, metadata for each asset, and so on.
- Creation of the playback experience. *Originating/Authoring Systems* create slideshows playable on CE devices or PC as electric *Albums*. They are realized as *Album Manifest* files which can include effects such as transition between images, duration of each image and background music.
- Support the migration of *DigiAlbum* authored using a previous version of the *PASS Logical Disk Specification* to a newer version. Or, support the migration of multiple DigiAlbums to another new one.
- Creation of Screen size images for accelerating playback response (optional).

- Completion of control files including *AssetList Manifest*, *Album Manifest* and *Index Manifest* (PASSIDX.PVM) which is located in root directory of a medium and has a role of a starting point to entire PASS contents.
- Create video segment which is compliant to DVD Video or Video CD and playable on existing DVD player (optional).
- Writing a created PASS content image to CD or DVD medium as a PASS DigiAlbum.

Originating/Authoring systems have actually two parts, which are Originating application and Authoring component that is responsible to lower layer of the systems. In this document, the both are not separately described. Therefore, the system is simply called "Originating system" in the following description. Reference document "PASS Authoring System Software Development Kit developer's manual" describes the Authoring component which will be suppoted in PASS Initiative.

# 4 Inputs to Originating System

## *4.1 Interface for input of asset data*

### 4.1.1 Input media and devices

PASS Originating System shall be capable of having an input device to read image files in the media that users would bring. DSC memory cards are expected to be the most common input media. There are a variety of DSC memory cards, including SmartMedia, CompactFlash, SD memory card, and MemoryStick. miniSD and MemoryStick Duo are used for camera phones. PASS Originating System should deal with as many memory cards as possible with various types of card readers and adapters.

It is expected that optical discs would be used to PASS Originating System as input media in many cases. They are written by legacy retail services and by users with PCs. There are a variety of optical disks, including CD-R, DVD-R/RW, DVD+R/RW, and DVD-RAM. PASS Originating System should deal with as many optical disks as possible. Particularly, in PASS v1.0 Originating System as described later, CD-Rs and DVD-Rs are defined as mandatory, therefore it is also mandatory to equip drives that are capable of reading and writing both of them.

Scanners are needed for users who bring in photo negatives and prints. PASS media created by scanning are optional. Photo-quality prints are required by PASS specification, therefore this should be considered for the image quality of scanning.

### 4.1.2 Content Store

It is unlikely that a variety of data described in the previous sections will be directly copied to PASS media in the PASS Originating System for the following reasons: it is desirable to minimize the accessing times of a user's media for safety.; operations including data format transformation and metadata input are needed; and writing images for CDs and DVDs have to be created. The media that users bring in should be stored once on a working hard disk of Originating System. This is called Content Store in PASS. In PASS specification, the format of Content Store is not determined and left to Originating System Implementation.

## *4.2 PASS data formats*

### 4.2.1 Still image

While the format of still images as input media for PASS Originating System is not specified, still image files for PASS media shall be in Exif/JPEG format. Originating System could not be restricted to Exif/JPEG format, however, it shall simultaneously input image files converted to this format. They are the only still image files included in AssetList Manifest.
Originating System should be capable of checking the formats of input still image files and converting them to Exif/JPEG formats if they are in other formats.
Various DSC manufacturers have their own proprietary formats for RAW image data from DSCs, therefore it is not necessarily possible to convert them to Exif/JPEG. In an exceptional case like this, only such format may be written on PASS media, however users shall be informed of it in some way.
For PASS media, the extension of Exif/JPEG files is ".jpg" or ".JPG".

#### 4.2.2 Movie

While the format of movies as input media for PASS Originating System is not specified, movie files for PASS media shall be MotionJPEG(.MOV or .AVI), MPEG1, MPEG2 or MPEG4. Originating System could not be restricted to these formats, however, it shall simultaneously input movie files converted to one of these formats. They are the only movie files included in AssetList Manifest.
For PASS media, the extension of movie files is ".mov"(or ".MOV") or ".avi"(or ".AVI") for MotionJPEG and ".mpg"(or ".MPG") for MPEG1/2/4.

#### 4.2.3 Audio

While the format of audio as input media for PASS Originating System is not specified, audio files for PASS media shall be in MP3 or WAV format. Originating System could not be restricted to these formats, however, it shall simultaneously input audio files converted to one of these formats. They are the only audio files included in AssetList Manifest.
Originating System should be capable of checking the formats of input audio files and converting them to MP3 or WAV format if they are not in this format.
For PASS media, the extension of audio files is ".mp3"(or ".MP3") for MP3, and ".wav"(or ".WAV") for WAV.

#### 4.2.4 Other Asset Files

Originating System could not be restricted to formats mentioned above, however, these formats are the only Asset Files included in AssetList Manifest. Thus, there is no guarantee that it will be transferred securely in the migration process of PASS media in the future.

### *4.3 Creating and Editing Compound Asset*

Originating System shall be capable of creating Compound Assets consisting of multiple files, such as still images with audio memo and Burst Shot Image. PASS specification covers the following three kinds of image data defined in OSTA MPV as Compound Assets:

(1) Still with Audio
One still image file, and one (or more) audio file(s). Ex. still image with voice memo.
(2) Still Multishot Sequence
Multiple (two or more) still images captured sequentially within short term like a burst.
(3) Still Panorama Sequence
Multiple (two or more) still images captured with an intention to create a panorama.

#### 4.3.1 Still with Audio

If still images are input in DCF format, Originating System can automatically recognize the existence of audio files related to still images files according to the DCF file name. Refer to DCF specification for detail. In addition, for still images in Exif format, the existence of such audio files can be automatically recognized if it is described in RelatedSoundFile Tag (40964) of Exif tag. Originating System should be capable of creating Still with Audio based on these data.
It is recommended that Originating System should be capable of having manual editing capability by human operators in order to create Still with Audio on users' requests, or to verify or modify Still with Audio after the automated process.

#### 4.3.2 Still Multishot Sequence

Generally, the information used to automatically recognize the continuous shooting of several still images as such is the time intervals in shooting pictures.
Originating System should be capable of creating StillMultishotSequence based on the time interval between each still image file. It may have other methods to create StillMultishotSequence, other than the shooting time intervals.
Originating System should have manual editing capability by human operators in order to create Still Multishot Sequence by users' requests, to verify or modify Still with Audio after the automated process, or to create StillMultishotSequence by visually observing image contents.

#### 4.3.3 Still Panorama Sequence

There is no standardized information to automatically recognize several still images shot in panorama mode as such. Thus, Originating System should be capable of creating Still Panorama Sequence based on operator's judgment of image contents or user's requests. It may have a capability of automatically creating Still Panorama Sequence based on other information in some other way.

## 5 Metadata Input for entire medium and each asset

### *5.1 Metadata for entire medium*

In PASS specification, there are mediumID, information related to the originator, mediumLabel, date, and description as metadata for entire medium. Refer to LDS for the definition of those metadata. Originating System should be capable of generating or manually inputting contents for each metadata in the following methods. They are described in PASS Index Manifest (PASSIDX.PVM) based on XML description.

(1) MediumID ( <pass:mediumID> )

Originating System shall automatically generate MediumID based on the format defined in LDS.

(2) Information about Originator ( <pass:originator> )

Originating System shall generate texts to describe its name, manufacturer, and version. They are fixed values to an Originating System.

(3) PASS specification version( <pass:version> )

Originating System shall write its PASS specification version.

(4) MediumLabel( <pass:mediumLabel> )

This is an optional label for the entire PASS Medium and includes the title of Medium itself, etc. It typically is a text selected by users. Originating System should enable operators to input MediumLabel. If there is no input information, the creation date of the Medium can be used in its place. In this case, use YY-MM-DD format.

(5) Date( <dc:date> )

Originating System shall write the creation date of the PASS medium.

(6) Description( <dc:description> )

It is an optional description of the entire PASS Medium. Input texts selected by users if any. If there is no input information as a description, omit it.

## *5.2 Metadata for each Asset*

This section provides a description of metadata input for each Asset by Originating System.

### 5.2.1 Still Image

#### *5.2.1.1 Metadata from Exif Tag*

If input still images are Exif files, they should result in metadata of PASS Still Image Asset after Originating System extracts contents from their several Exif tags and then converts data formats accordingly. In addition, Originating System should enable human operators to manually input and edit metadata in order to verify and modify their contents or to input them on users' requests. It may have a capability of automatically generating information to input in some way if Exif tag is empty. They are stored in mpv:METADATA tag (for DIG35) or nmf:METADATA tag (for Dublin Core) in each Still Image Asset of PASS AssetList Manifest. Such Exif Tags are as follows.

| | Exif Tag Name | Exif Tag ID | PASS Usage | PASS XML Tag and structure |
|---|---|---|---|---|
| 1 | Image title | 270 | Title of Still Image | dc:title |
| 2 | Artist | 315 | Creator of Still Image | dc:creator |
| 3 | UseComment | 37510 | Description of Still Image | dc:description |
| 4 | Date and time of original data generation | 36867 | Date of Still Image | dc:date |
| 5 | Format | NA | Format of Asset(MIME type) | dc:format |
| 6 | Pixel X Dimension | 40962 | Width of Still Image | dig35:BASIC_IMAGE_PARAM<br>dig35:BASIC_IMAGE_INFO<br>dig35:IMAGE_SIZE<br>dig35:WIDTH |
| 7 | Pixel Y Dimension | 40963 | Height of Still Image | dig35:BASIC_IMAGE_PARAM<br>dig35:BASIC_IMAGE_INFO<br>dig35:IMAGE_SIZE<br>dig35:HEIGHT |
| 8 | ColorSpace | 409610 | Colospace of Still Image | dig35:BASIC_IMAGE_PARAM<br>dig35:COLOR_INFO<br>dig35:COLORSPACE<br>dig35:PROFILE_NAME |
| 9 | SubjectLocation | 41492 | Position of Subject within Still Image | dig35:IMAGE_CREATION<br>dig35:CAMERA_CAPTURE<br>dig35:CAMERA_SETTINGS<br>dig35:SUBJECT_POSITION |

| | Exif Tag Name | Exif Tag ID | PASS Usage | PASS XML Tag and structure |
|---|---|---|---|---|
| 10 | GPS Info IFD | GPS Info IFD | Location of Still Image | dig35:IMAGE_CREATION<br>dig35:CAMERA_CAPTURE<br>dig35:CAMERA_SETTINGS<br>dig35:CAMERA_LOCATION |
| 11 | Orientation | 274 | Orientation of Still Image | dig35:IMAGE_CREATION<br>dig35:CAMERA_CAPTURE<br>dig35:CAMERA_SETTINGS<br>dig35:ORIENTATION |

(1) Image title

(a) For Exif images, if an Image Title tag (270) is not empty, the Originating System shall copy it to the Still Image Asset's dc:title in the AssetList Manifest.
(b) The Originating System should be capable of having manual input/editing method for dc:title of an Asset (AssetList Manifest).
(c) If an Image Title tag (270) is empty and an Asset title to be input is not known, it should substitute the date(YYYY-MM-DD) or the AssetID, where the AssetID is the lower 4 letters of the attribute mpv:ID of <Still> Asset in an AssetList Manifest .
Originating system shall fill dc:title for image Assets.

(2) Creator (Artist)

(a) For Exif Images, if Artist tag (315) is not empty, the Originating System shall copy it to the Still Image Asset's dc:creator in the AssetList Manifest.
(b) The Originating System should be capable of having manual input/editing method for dc:creator of each Still Image Asset (AssetList Manifest).
If it could not know a creator name, the Originating System might make no dc:creator for any object.

(3) Description (UserComment)

(a) For Exif images, if UseComment tag (37510) is not empty, the Originating System shall copy it to the Still Image Asset's dc:description in the AssetList Manifest.
(b) The Originating System should be capable of having manual input/editing method for dc:description of each Still Image Asset (AssetList Manifest).
If it could not know content to be input, it might make no dc:description for any objects.

(4) Date (Date and time of the original data generation)

(a) For Exif images, the Originating System shall convert and copy the Exif Date and time of the original data generation (36867) to the Still Image Asset's dc:date in the AssetList Manifest.
(b) The Originating System should be capable of having manual input/editing method.
Originating system shall fill dc:title for image Assets.

(5) Format

This is not from Exif tag. The Originating system may describe the file format in this Dublin Core metadata as a MIME type.

(6) Width and Height (Pixel X and Y Dimension)

For Exif images, the Originating System should convert and copy Pixel X/Y Dimension tag (40962/40963) to dig35:WIDTH and dig35:HEIGHT of the Still Image Asset in the AssetList Manifest.

(7) Color Space

For Exif images, the Originating System shall covert and copy Exif ColorSpace Tag (409610) to dig35:PROFILE_NAME of the Still Image Asset in the AssetList Manifest.

(8) Subject Location

For Exif images, if SubjectLocation tag (41492) is not empty, the Originating System shall convert and copy it to dig35:SUBJECT_POSITION of the Still Image Asset in the AssetList Manifest.

(9) Location of Still Image (GPS Info IFD)

For Exif images, if GPS Info IFD exists, the Originating System shall convert and copy it to dig35:CAMERA_LOCATION of the Still Image Asset in the AssetList Manifest.

(10) Orientation

For Exif images, if Orientation tag (274) is not empty, the Originating System shall convert and copy it to dig:ROLL of dig35:ORIENTATION of the Still Image Asset in the AssetList Manifest.

Orientation is important information in reproducing an image, therefore, if Exif tag is empty or input image is not in Exif, Originating System must input it.

*5.2.1.2 Other than Exif Tag metadata*

Originating System should be capable of having input/editing method of the following metadata, in addition to those from Exif Tag. It may have a capability of automatically generating information to input in some way. They are stored in mpv:METADATA tag in each Still Image Asset of PASS AssetList Manifest.

| Metadata Name | PASS Usage | PASS XML Tag and structure | note |
|---|---|---|---|
| Location | the location of the image | dig35:CONTENT_DESCRIPTION<br>dig35:LOCATION | longitude/latitude/altitude, address, or any comment |
| Person Description ( for plural persons within a image) | | | |
| Person Name (for each person) | a person name within the image | dig35:CONTENT_DESCRIPTION<br>dig35:PERSON<br>dig35:PERSON_NAME<br>dig35:NAME_COMP | "Given" name and "Family" name shall be supported as the attributes of NAME_COMP. |
| Position (for each person) | The position of each person within the image | dig35:CONTENT_DESCRIPTION<br>dig35:PERSON<br>dig35:POSITION | Rectangular area shall be supported as position data type. |
| Comment (for each person) | Any comment for each person within the image | dig35:CONTENT_DESCRIPTION<br>dig35:PERSON<br>dig35:COMMENT | |
| Thing Description ( for plural things within a image ) | | | |
| Thing Name (for each thing) | the name of thing within the image | dig35:CONTENT_DESCRIPTION<br>dig35:THING<br>dig35:NAME | |
| Position (for each thing) | The position of each thing within the image | dig35:CONTENT_DESCRIPTION<br>dig35:THING<br>dig35:POSITION | Rectangular area shall be supported as position data type. |
| Comment (for each thing) | Any comment for each thing within the image | dig35:CONTENT_DESCRIPTION<br>dig35:THING<br>dig35:COMMENT | |
| Event Description ( 1 event ) | | | |
| Event Type | the event type within the image | dig35:CONTENT_DESCRIPTION<br>dig35:EVENT<br>dig35:EVENT_TYPE | |

| | | | |
|---|---|---|---|
| Description | description of the event within the image | dig35:CONTENT_DESCRIPTION<br>dig35:EVENT<br>dig35:DESCRIPTION | |
| Comment | Any comment for the event | dig35:CONTENT_DESCRIPTION<br>dig35:EVENT<br>dig35:COMMENT | |

(1) Location

It is the information about the position of the subject in the shooting location. In DIG35 Location can be embedded as child tag of Person and Event in addition for the entire image, while in PASS, it is embedded only for the entire image. Originating System should support the three designation methods, including longitude/latitude/altitude, address, or any comment. Exif GPS IFD is the information of the position of the camera, therefore different from the position of the subject in the strict sense, however, it can be used if it's included in Exif Tag. In addition, Originating System may have a capability of automatically determining which in some way.

(2) Person Description (for plural persons within an image)

It is the information about subjects in the image. Generally, a picture contains more than one subjects, therefore, Originating System should input several Person Descriptions. Among Person Descriptions in DIG35, the following three descriptions are utilized in PASS specification:

- Person Name

It is the name of the subject input together with the attribute of given or family name in Originating System. In addition, if the correct subject name is unknown, Originating System may attach some sort of identifier to the subjects in the image for Person name. In this case, it is embedded as Given name.

- Position

It is the position of subjects in the image. From the several designation methods in DIG35, only the one using a rectangular area is utilized in PASS specification. It is recommended that Originating System should be capable of specifying an area with a rectangular pointer on a display image in some way. It may have a capability of automatically recognizing an area in come way.

- Comment

It is any comments for each person within the image.

(3) Thing Description (for plural things within an image)

It is the information about the things in the image. Generally, a picture contains more than one thing, therefore, Originating System should input several Thing Descriptions. From Thing Descriptions in DIG35, the following three descriptions are utilized in PASS specification:

- Thing Name

It is the name of the thing in the image. Originating System may attach some sort of an identifier to a thing in the image for Thing name.

- Position

It is the position of the thing in the image. From the several designation methods in DIG35, only the one using a rectangular area is utilized in PASS specification. It is recommended that Originating

System should be capable of specifying an area with a rectangular pointer on a display image in some way. It may have a capability of automatically recognizing an area in some way.

- Comment

It is any comments for each thing within the image.

(4) Event Description

It is the information about the event of the image taken. Originating System should be capable of inputting a single Event Description for a single image. From Event Descriptions in DIG35, the following three descriptions are utilized in PASS specification:

- Event Type

It is the information of the type of the event, such as excursion, travel, graduation, and wedding. Originating System may input Event Type manually or choose from the already-made event lists. It may automatically recognize Event Type in some way.

- Description

It is a specific name created by users, such as "The excursion to Hakone in spring 2005" and "The trip to Shanghai in fall 2006."

- Comment

It is any comments for events.

### 5.2.2 Other than Still Image

Originating system shall creates the following metadata for assets other than still images.

| tag | child tag | content | type | occ |
|---|---|---|---|---|
| <dc:title> | none | the asset title (if no title, substitute the AssetID or the creation date string) | dc:title | 1 |
| <dc:date> | none | the date of asset creation | dc:date | 1 |
| <dc:format> | none | the format of asset(MIME type) | dc:format | 0 or 1 ( 0 for MIME type undefined) |

** Other Dublin Core metadata are optional.

### 5.2.3 Compound Assets

The descriptions of Compound Assets consist of the entire description such as <StillWithAudio> and descriptions of each asset that the entire description points to such as <Still> and <Audio>. Metadata of Compound Assets locate <dc:title> and <dc:date> as the entire description and the others as metadata of each asset that constitutes Compound Asset.

## 6 Data storage structure

PASS Originating System can choose the following formats as a directory structure on PASS media: for CDs, either Kodak Picture CD format, DCF/Fujicolor CD format, or Konica Minolta Hot Album format; and for DVDs, Unified Storage format. PASS Originating System shall support at least 2 formats, or one format for CDs and DVD Unified Storage format. PASS Originating System shall be capable of enabling operators to choose them to create PASS media.

# 7 Create and edit AssetList

## *7.1 Define AssetList*

For inputs in DCF format, Originating System shall store groups of files in a single DCF folder in a single Asset Roll Directory. It generates a single AssetList Manifest from group of files in input DCF folders. In other cases, it generates one or more Asset Roll Directory and AssetList Manifest on users' requests or operators' judgments.
More Examples to be listed.

## *7.2 Editing AssetList and Asset Metadata*

### 7.2.1 Asset metadata

Metadata selected in this section is recommended to be input for each Asset or modified after generating AssetList.

#### *7.2.1.1 Image Orientation*

Originating System shall input image orientation for each Still Image Asset since it is important information for displaying still images. It is also necessary to verify and modify automatic inputs.
In addition, it is recommended that Originating System is capable of generating AssetList and inputting or modifying Image Orientation by displaying thumbnail view of images in AssetList. Errors are tolerated to some extent since it is not always possible to recognize Image Orientation of an image of a plane in an aerobatic flight and a sleeping baby for instance exactly on photographers' intentions.

#### *7.2.1.2 Favorite*

Originating System should be capable of inputting Favorite of each image in AssetList. It is used to lower priority of poorly shot images and to set priority of a representative image higher than all the other similar images.

#### *7.2.1.3 Other metadata*

It is recommended that Originating System is capable of verifying and modifying other metadata after generating AssetList.

### 7.2.2 Creating AssetList Manifest file

Originating system shall be capable of creating an AssetList Manifest file for each AssetList(Asset Roll directory) based on Assets and AssetList information mentioned above.

# 8 Display Images

Still Image Asset of PASS media are the images from DSCs and high-resolution scanners and usually too large for display on TVs in common use. In PASS specification, display image (sub rendition), or downsized original image (master rendition) can be stored. Originating System should be capable of creating this display image as an option and writing it on PASS media. In addition, display images can be of multiple resolutions according to their display devices. Display images shall meet the following requirements other than those mentioned above:

- Display image format should be Exif/JPEG or JFIF/JPEG
- Color space of a display image is sRGB regardless of the color space of the original image.
- A display image should be oriented according to a photographer's intention as much as possible.
- Display images are created for every Still Image and located on the subdirectory of Asset Roll Directory that includes the original image.
- Display images are written as a sub rendition of Still Image Asset in AssetList Manifest in the parent Asset Roll Directory.
- Description of display images in AssetList manifest does not need to include metadata which includes title, date, format, colorspace and orientation.

# 9 Create and edit album

Originating System shall generate Albums.

## *9.1 Default Album and Custom Albums.*

Originating System shall be capable of generating Default Album, and should be capable of generating Custom Album. Default album is Album corresponding to each AssetList, or each Asset Roll Directory, and Originating System shall generate the same number of Default Albums in PASS medium as the number of AssetLists. Custom Album is generated on users' requests, usually by choosing Assets from each AssetList.

## *9.2 Select Asset data*

Assets consisting of Album, or Assets to reproduce Album are Still Image Asset, Still with Audio Asset, Still Multishot Sequence, Still Panorama Sequence, and Movie Asset. They are called Album reproduceable Assets. Other Assets such as standalone Audio Asset are not specified as Assets to reproduce Album in PASS specification.

Originating System simply utilizes all Assets to reproduce Album for each AssetList. Pictures on users' requests or obviously poorly taken pictures can be deleted from Default Album.

Originating System should be capable of generating Album by choosing Asset from each AssetList based on users' requests.

## *9.3 Album metadata*

In PASS specification, it is mandatory to input metadata of title and date for Album. Originating System shall be callable of inputting these data for each Album. It inputs a title selected by users if any, and if not, it should generate a new title by date information. In the later case, a title shall be formatted to "YYYY.MM.DD-YYYY.MM.DD", where the first is the earliest captured date and the second is the latest one of Assets included in the Album manifest.

Moreover, if there is no date information such as film scanning images, Originating system may create a title combining "Album" and number order ("001", "002") of Album in media, such as "Album001" and "Album002" as an Album Title.
Other metadata are optional, however, dc:description is recommended to describe an Album. It also should be capable of inputting the priority of an Album.

### *9.4 Background music*

In PASS specification, an audio file in MP3 or WAV format is defined as background music for Album. Originating System should be capable of selecting one audio file at least for a single Album and defining it for Album. When it can select more than one audio file for a single Album, it should be capable of defining correspondence of each audio file to each reproduceable Asset for Album.

### *9.5 Transition and Duration*

In PASS specification, transition filter between playback Assets can be defined.
Originating System shall be capable of defining default transition for each of the entire Album. In addition, it should be capable of specifying the interval in Album for changing transition.

The recommended types of transition used in PASS are barWipe, irisWipe, clockWipe and snakeWipe same as MPV Presentation Profile Specification rev1.01.

The duration of playback time in playback Asset of each Album can be defined in PASS specification. Originating System shall be capable of defining default duration for each of the entire Album. In addition, it should be capable of defining duration for each Asset in Album separately if it is changed.

### *9.6 Creating Album Manifest file*

Originating system shall be capable of creating an Album Manifest file for each Album based on Album information mentioned above.

## 10 creating Index Manifest file

Originating system shall be capable of creating a Index Manifest file which is located in root directory of medium and named "PASSIDX.PVM".

## 11 Video Album (DVD Video or Video CD)

Originating System shall be capable of converting each Album defined in Album Manifest into movies and writing them as Video-CD or DVD-Video data in the video segment of the media. For creating Video Album, the following conditions shall be met:

- The image quality parameters and versions of DVD Videos or Video CDs are not defined in PASS specification.
- All the Albums to be created as Album Manifest shall be made into movies respectively.
- Menu screen to choose multiple Video Albums on are required.
- ImageID (AssetListID and AssetID) shall be superimposed.
- Other effects including background music, transition, and duration are not defined.

## 12 Migration

Originating system shall be capable of migrating PASS media to a new PASS medium.

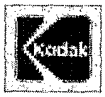
- A new PASS medium as a result of migration shall be compliant to PASS specification.
- All metadata for Assets and Albums on source medium shall be migrated to the destination PASS medium as long as the consistency among metadata is preserved.
- IDs which include MediumID, mpv:ID and so on, shall be reissued or renumbered consistently.
- Originating system shall be capable of migrating legacy PASS CDs ( ex. Fujicolor CD PASS, Picture CD PASS or HotAlbum) to PASS recommended directory/file structure DVD.
- The quality of Asset files shall be preserved in migration process. In future PASS version, if new file formats would be defined, Originating system should convert Asset files to new formats under new PASS version.
- In future PASS version, if new functions would be defined, Originating system might apply them to new migrated PASS medium under new PASS version.
- Video segment of source media need not be migrated. Originating system can be capable of recreating video album on a destination PASS medium from Album manifests.

## 13 Writing Media

Originating system shall be capable of collecting data, creating disc image and writing it to CD or DVD medium.

- This PASS specification version restricts media type to CD-R among CDs and DVD-R among DVDs.
- Originating system should check medium before writing.
- Originating system should adopt writing technology which seems to be the most reliable method.

APPENDIX A-3



FUJIFILM

KONICA MINOLTA

PICTURE ARCHIVE AND SHARING SYSTEM

A Joint Initiative

*Konica-Minolta, Fuji Film, Eastman Kodak*

*Version 0.80*

# Receiving/Playback System Requirements

Authors: Y. Ueda

Contributors:

Version 0.80

January 12, 2005

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# Revision History

| Version | Date | Author(s) | Description |
|---|---|---|---|
| 0.10 | 10/8/04 | Y. Ueda | Initial Draft |
| 0.30 | 12/16/04 | Y. Ueda | Draft for Tokyo TC meeting |
| 0.60 | 1/8/05 | Y. Ueda | Draft for evaluation by software developers |
| 0.70 | 1/17/05 | Y. Ueda | Draft for San Jose TC meeting |
| 0.80 | 1/26/05 | Y. Ueda | |

# 1 Overview

## 1.1 Purpose

This document provides a detailed description of the requirements for PASS receiving/Playback System that is compatible with the Picture Archive & Sharing System and creates PASS DigiAlbum. Refer to White Paper.

## 1.2 Audience

## 1.3 What is PASS?

PASS stands for Picture Archive and Sharing Standard. The goal of this system is to create a set of open standards for the consumer imaging industry aimed at the preservation of digital photos and motion images. The purpose of this standard is to ensure that a consumer's digital memories are not lost to future generations. The embodiment of these standards will take the form of the *PASS* format, a method for storing pictures, motion images and related content. Disks authored with the PASS format shall be referred to as *DigiAlbums*. The goals of this format are:

1)To define the requirements of authoring, playback, and print enablement for a new generation of products and services
2)To provide interoperability amongst those systems
3)To better meet the consumer's desire to easily store, share, and print by using these products and services.

コメント [y1]: Change from System to Standard

## 1.4 Dictionary of Terms and Acronyms

<The working drafts will reference an external Glossary document>

## 1.5 Referenced Documents

- PASS Logical Disc Specification (LDS)
- PASS System Requirements specification
- PASS Originating/Authoring System Requirements
- PASS Authoring System Software Development Kit developer's manual

# 2 System Overview

## 2.1 Major unified features of PASS

There are the following major unified feature of PASS picked up (Fig.1):

*1) Easy playing on Consumer Electronics (CE)*

Easy playing photo slide show without stress by existing DVD players and PASS supported DVD players

*2) Easy print ordering on TV*

Check slide No. on TV and write down it on an ordering sheet.

Easy print ordering at shop will be done by bringing such ordering sheet and PASS digi-Album.

*3) Easy print ordering on any Print Kiosks*

Available for print ordering from any PASS digi-Album at any PASS supported Print Kiosks

*4) Easy photo retrieve*

Available for easy retrieve of images by date and any keywords

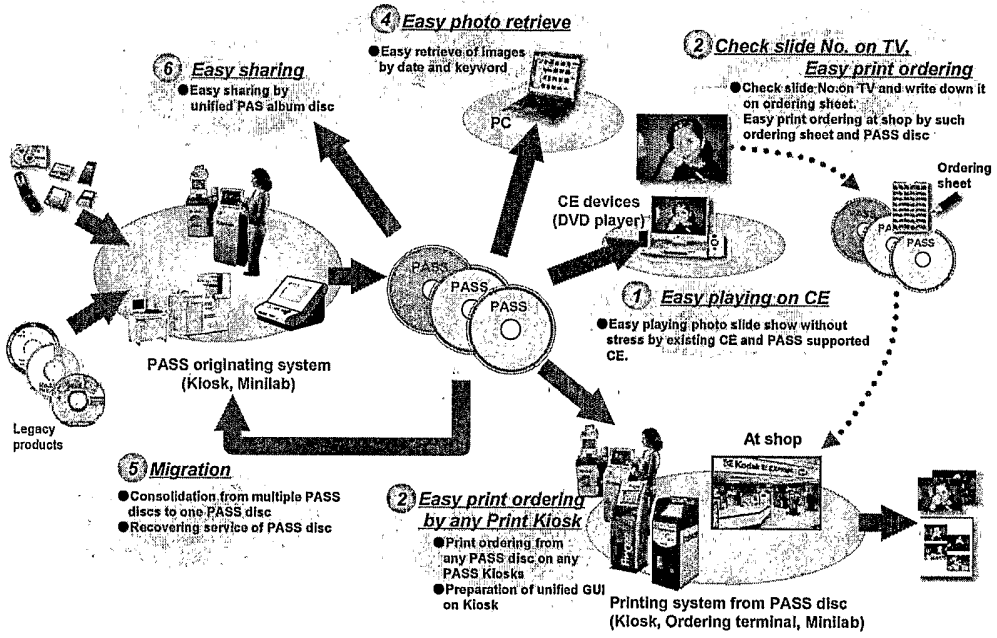
*5) Safe migration*

Available for consolidation from multiple PASS digi-Albums to one PASS digi-Album with migration of history of photo

*6) Easy sharing*

Available for easy image sharing by unified PASS digi-Albums.

***Fig.1. Unified PASS Features***




## *2.2 System Overview*

The PASS system is made up of the following major systems and components;

1) Originating system

Originating systems creating PASS discs, has the following functions typically;

a) Collect user's data on various media, and convert them to unified formats on PASS discs.

b) Collect or generate metadata(date, keyword,...) for user's images on PASS discs.

c) Create digital albums on PASS discs, as slideshows playable on CE devices.

d) Migrate multiple PASS discs to new one, over and over generations.

e) Create video segment as option which is playable on existing DVD player.

コメント [y2]: Use description from Overview in Originating system spec. document

コメント [y3]: Remove description of Authoring SDK according to overview of Originating system spec. document

2) Receiving system

Receiving system has the following functions mainly;

a) Check ASSET format

b) Read and interpret PASS MANIFEST files

Receiving system shall include Playback component or Printing component.

3) Playback component

Playback component in Receiving system has the following functions mainly;

a) Display ASSETs according to PASS MANIFEST.

b) Select album from multiple PASS PLAYLIST MANIFEST

c) Display ASSETs retrieved by date and keywords as optional functions

4) Printing component

Printing component in Receiving component has the following functions mainly;

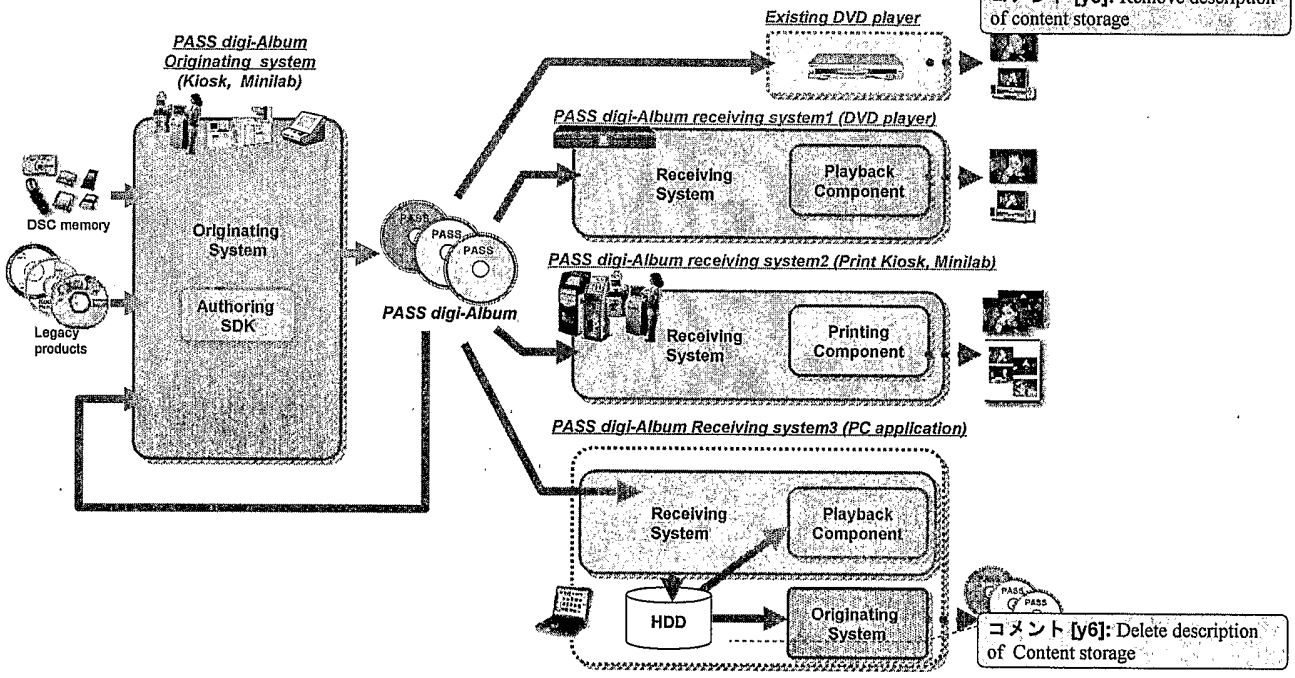
a) Select ASSETs for print

b) Print selected ASSETs

コメント [y4]: Remove description of output ordering data to memory card and send ordering data online.

コメント [y5]: Remove description of content storage

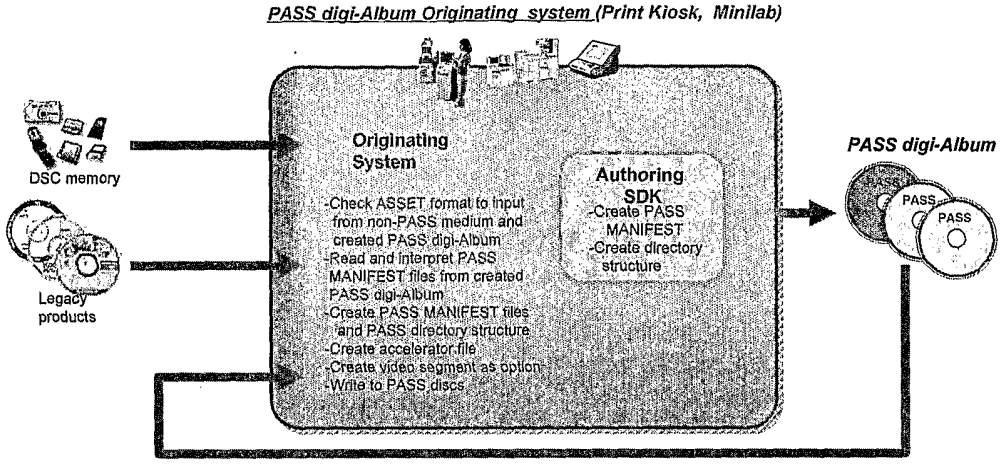
***Structure of Originating, Authoring, Receiving, Playback and Print component***



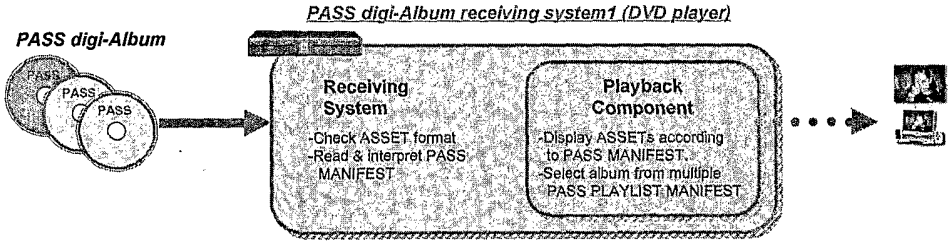

コメント [y6]: Delete description of Content storage

## 2.3 *Example systems*

### *1) PASS digi-Album Originating system (Kiosk, Minilab)*

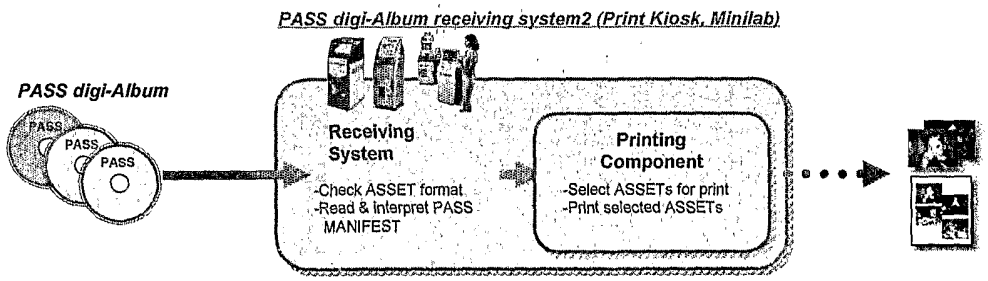



### *2) PASS digi-Album Receiving system1 (DVD players)*

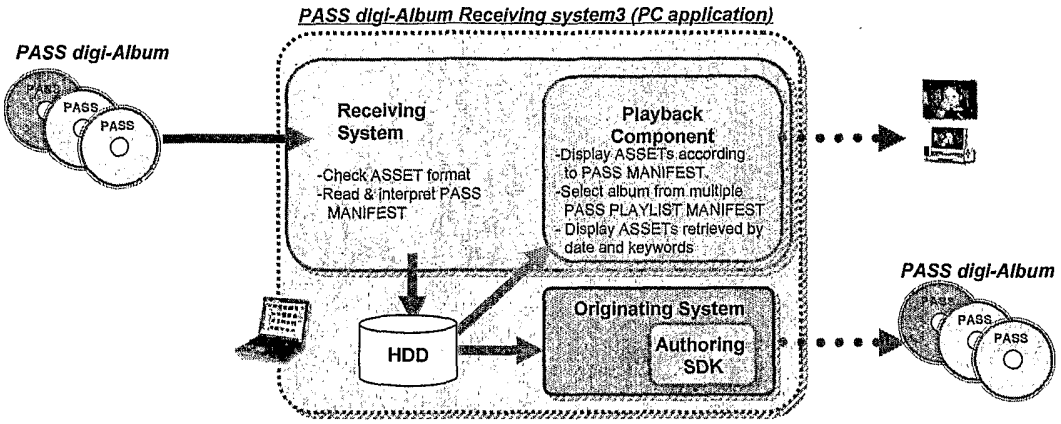



### *3) PASS digi-Album Receiving system2 (Print Kiosks, Minilab)*

コメント [y7]: Remove PASS digi-Album Receiving system 3 (DVD player with ptiny ordering function) Such as DPOF output and online order sending function)



*4)PASS digi-Album Receiving system3 (PC application for PASS)*




## 3 *PASS Receiving / Playback / Printing system overview*

### *3.1 Receiving system*

Receiving system is a system that need to read *DigiAlbums*. It can take on many forms such as: Kiosks, PCs, DVD Players, etc. The primary task of a Receiving system is to read PASS INDEX MANIFEST to determine how the media was written and then to be able to access to PASS PLAYLIST MANIFEST and PASS ASSET MANIFEST where information for assets and presentation are stored on the media. This information will then be used by playback component, print component, or interface with a content storage. The *Receiving System* will be responsible for the following functions:

1) Check ASSET files to input on the media
2) Check and interpret PASS INDEX MANIFEST
3) Check and interpret PASS PLAYLIST MANIFEST
4) Check and interpret PASS ASSET MANIFEST

### *3.2 Playback Component*

The *Playback Component* addresses the needs of system that are designed to play the presentation experience on the media. This would include DVD Players or Software DVD players on a PC. The responsibilities of the playback component include:

1) Check priority to play whether PASS PLAYLIST MANIFEST or video segment
2) Read and Play presentation layer of *DigiAlbum* (Ex. DVD-Video, Video-CD ...)
3) Display albums
4) Select album
5) Display images from each album as index
6) Display images from each album as slide show
7) Display images as one by one

8) Play BGM during slide show playing
9) Display metadata for each ASSET
10) Retrieve and display images by date as an optional function
11) Retrieve and display images by keywords as an optional function

### *3.3 Print Component*

The *Print Component* is intended to handle the selection and printing of assets and optionally meta-data. The responsibilities of the *Print Component* are:

1) Select still ASSETs for printing either via the media playback experience or via a display method of the playback component.
2) Associate a high resolution asset with the selection method
3) Print selected still ASSETs

コメント [y8]: Remove description of output ordering data to memory card and send ordering data online.

コメント [y9]: Remove description of Content storage

PCT/JP2006/303346

# 4 *Function requirements for PASS receiving system*

## *4.1 Check PASS digi-Album*

### *4.1.1. Check whether any video segment exists or not (as an optional function)*

PASS receiving system with playback component can have a capability to check whether inserted PASS digi-Album has any video segment such as DVD-Video(or Video-CD) or not before checking PASS MANIFEST files in PASS digi-Album.

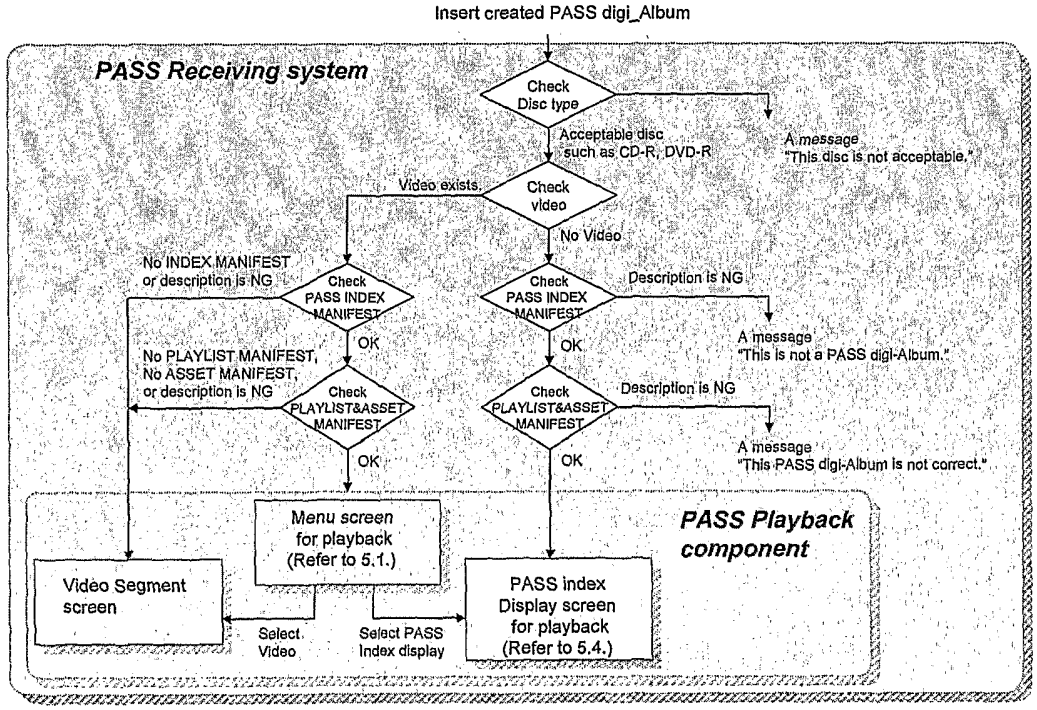
### *4.1.2. Check PASS MANIFEST files*

PASS receiving system shall read and interpret PASS INDEX MANIFEST file which is "PASSIDX.pvm" on the root location of PASS digi-Album media, and check originator information( <pass:originator> ) and/or PASS version information (<pass:version> ) in PASS INDEX MANIFEST.

According to this information, PASS receiving system shall recognize whether inserted PASS digi-Album is available for receiving or not. When PASS receiving system can receive inserted PASS-digi-Album, PASS receiving system shall try to interpret 3 kind of PASS MANIFEST files, which are PASS INDEX MANIFEST, PASS PLAYLIST MANIFEST and PASS ASSET MANEFEST.

Examples of check flow of inserted PASS digi-Album is as follows;

<An example of check flow of inserted PASS digi-Album in PASS receiving system with playback component>

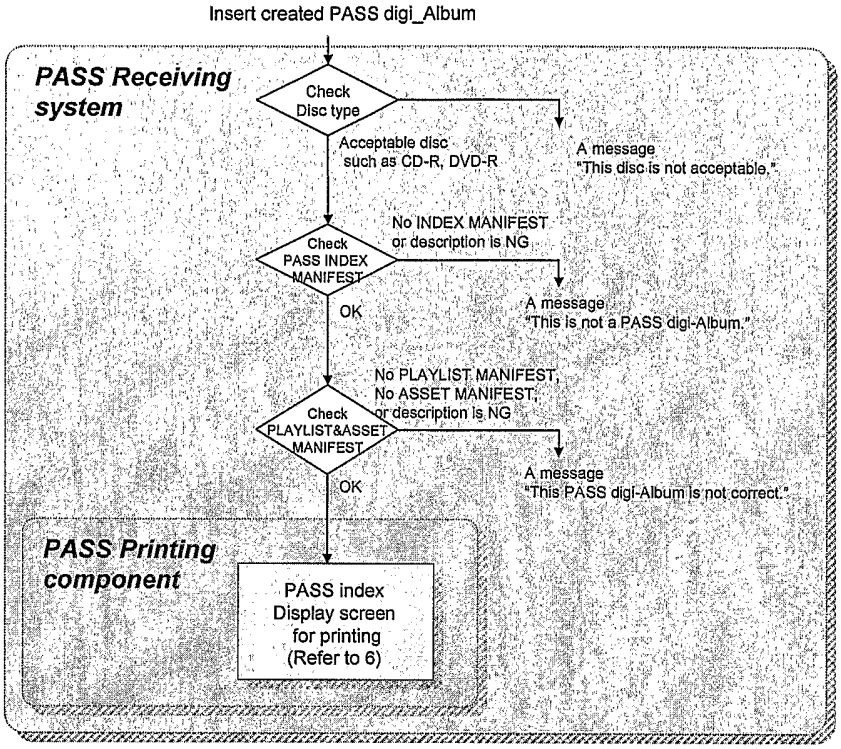







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<An example of check flow of inserted PASS digi-Album in PASS receiving system with printing component>

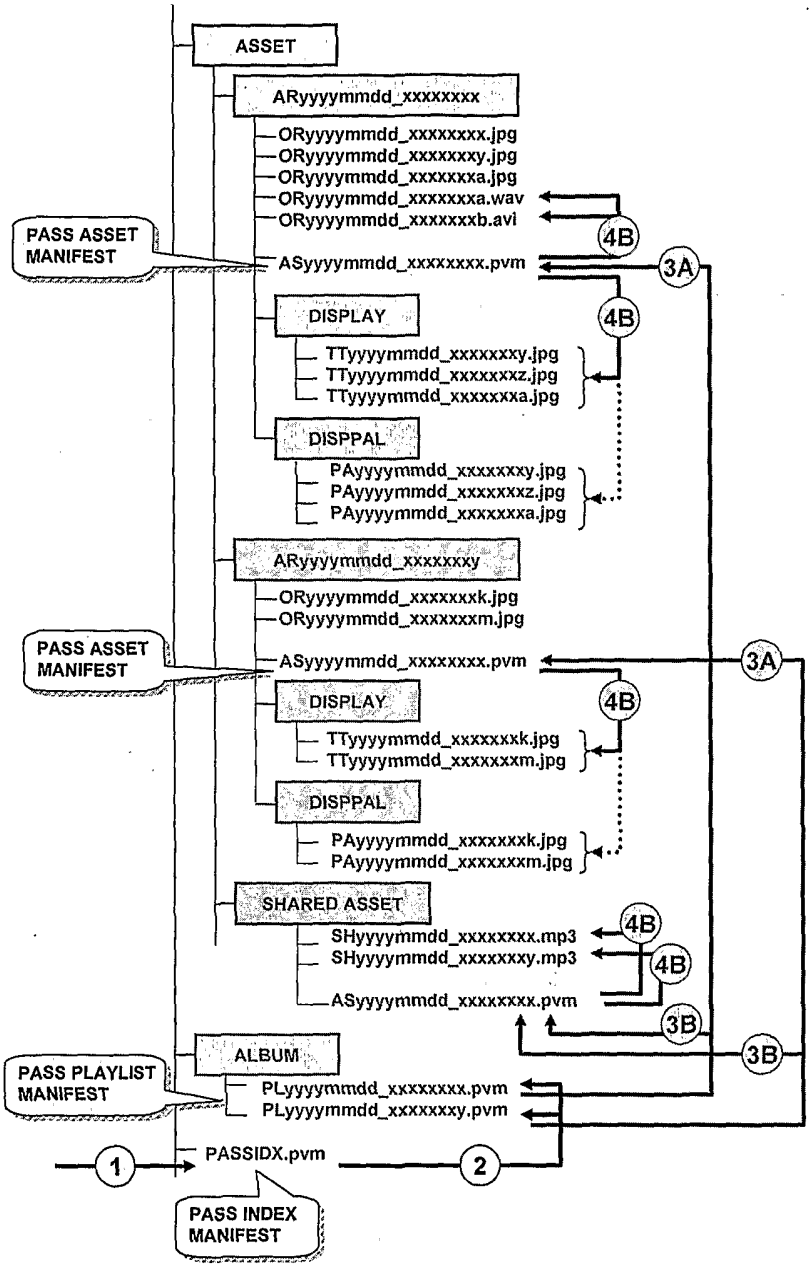



### *4.2 Read and interpret PASS MANIFEST files*

Receiving system will open PASSIDX.pvm as "PASS INDEX MANIFEST" (1) file for processing. This file will have reference to the playlist file "PASS PLAYLIST MANIFEST" (2). The "PASS PLAYLIST MANIFEST" has reference to the Asset manifest files "PASS ASSET MANIFEST" (3A) and to the shared manifest file (3C). Then the "PASS ASSET MANIFEST" will have necessary information (4A), (4B) to display the necessary ASSET from either the asset Roll directory or from the Display directories under that particular asset roll directory.

Sequence and the relationships between the PASS manifest files are as follows;

Sequence and the relationships between the PASS manifest files



PASS receiving system shall read and interpret all metadata described in 3 kind of PASS MANIFEST files, which are PASS INDEX MANIFEST, PASS PLAYLIST MANIFEST and PASS ASSET MANEFEST.

Detail of examples for PASS INDEX MANIFEST, PASS PLAYLIST MANIFEST and PASS ASSET MANIFEST and metadata in 3 PASS manifest files which PASS receiving system, playback component and printing component support as mandatory or optional are refered to PASS Logical Disc Specification (LDS).

コメント [y10]: Remove example of PASS MANIFEST files

## 5 *Function requirements for PASS playback component*

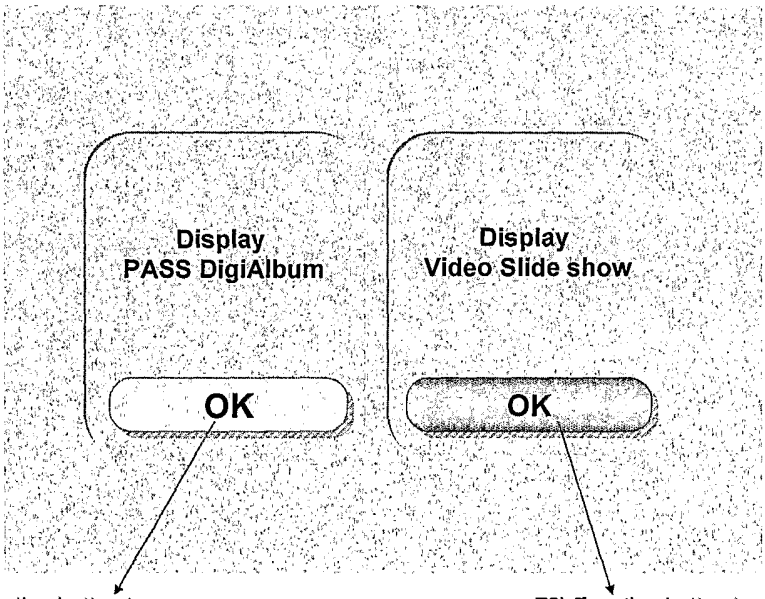
### *5.1 Display PASS Menu screen (as an optional function)*

PASS playback component can has a capability to display PASS Menu screen when PASS receiving system recognizes that there is both PASS AMNIFEST files and any video segment such DVD-Video(or Video-CD) in inserted created PASS digi-Album.

<Functions on PASS Menu screen>

| | | | |
|---|---|---|---|
| F1 | Function to go to PASS index display screen. | Display albums with ASSETs as index display.Refer to 5.4. | Mandatory function |
| F2 | Function to go to Video segment screen | Start video segment such as DVD-Video (or Video-CD) | Mandatory function |

<An example for PASS menu screen>



### *5.2 Play video segment*

Playback component can have a function to play video segment such as DVD-Video (or Video-CD) when PASS receiving system recognizes that there is also any video segment such DVD-Video(or Video-CD) in inserted created PASS digi-Album.

### *5.3 Check ASSET file format to load according to PASS PLAYLIST MANIFEST*

Playback component shall check each ASSET file format which is described in PASS ASSET MANIFEST files.

Mandatory file format of ASSET which playback component shall decode and display from created PASS digi-Album, is as follows;

| ASSET type | Mandatory file format to decode |
|---|---|
| Still | Exif/JPEG |
| Motion | AVI(Motion JPEG), MOV(Motion JPEG) MPEG1, MPEG2, MPEG4 |
| Audio | MP3, WAV |

コメント [y11]: Add MPEG2

コメント [y12]: Add WAV

### *5.4 Display images from Album in PASS digi-Album*

#### *5.4.1 Display Album list*

Playback component shall interpret PASS PLAYLIST MANIFEST on PASS digi-Album and display each album button in Album list area with the following information from PASS PLAYLIST MANIFEST;

<Items to display on each album button>

| | Item to display On each album button | XML tag name | Location to display | Capability to be displayed by Playback component |
|---|---|---|---|---|
| 1 | Title of each Album* | dc:title in PASS PLAYLIST MANIFEST | On each album button | Mandatory |
| 2 | Serial No. of Album in PASS digi-Album** | No metadata is used. | On each album button | Optional |

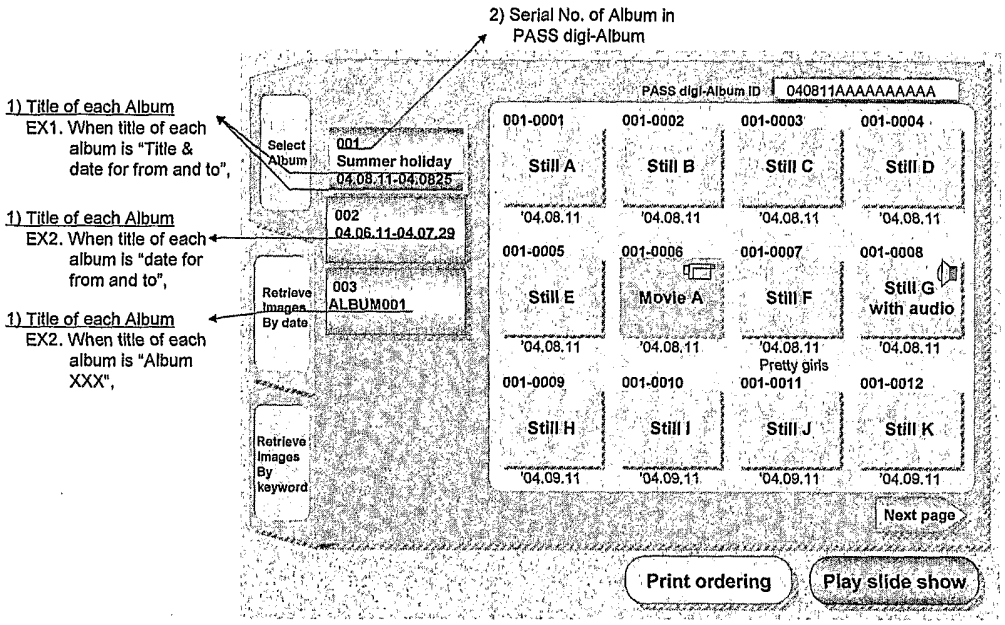
* As title of each Album, the following descriptions are done by PASS originating system and Playback component shall display one of them as a mandatory function;

- EX1: any title such as Summer holiday".
- EX2: Date information such as from yyyy.mm.dd to yyyy.mm.dd (ex.2004.12.24- 2004.12.28) according to captured date of all ASSET in each album by interpreting PASS ASSET MANIFEST as an optional.
- EX3: "ALBUMXXX" XXX is equal to last 3 digit of ASSETLIST ID.

** Playback component has a capability to display serial No. of Album in PASS digi-Album such as XXX which is from 001 to 999 as an optional function.

コメント [y13]: Add description of Serial No. of Album in PASS Digi-Album

<An example of display on each Album button>




*5.4.2 Select Album*

Playback component shall have a function to select album among displayed album list from PASS digi-Album.

*5.4.3 Display images from each album as index display*

Playback component shall display all ASSET file in each Album of PASS digi-Album as index display.

<How to display ASSETs on index display screen>

Playback component shall read PASS ASSET MANIFEST and recognize the path for each image files for display from PASS ASSET MANIFEST and try to display them.

- When ASSET file is still or still with audio, accelerator files of still images in DISPLAY directory or exif thumbnail are used for display as index display.
- When ASSET file is movie, original motion files in ASSET ROLL directory are used for display as index display.
- When ASSET file is movie or still with audio, Playback component can display any annotation or symbol icon which indicate movie or still with audio.

<Items to display on index display screen>

| | Items to display On index display screen | XML tag name | Location to display | Capability to be displayed by Playback component |
|---|---|---|---|---|
| 3 | PASS medium ID | Pass:mediumID In PASS INDEX MANIFEST | On index display screen of each album | Optional |
| 4 | Title of each ASSET | dc:title in PASS ASSET MANIFEST | Display close to each ASSET | Mandatroy (if described in PASS ASSET MANIFEST) |
| 5 | Image ID | ASSET LIST ID and ASSET ID are used In order to display Image ID | Display close to each ASSET | Mandatory to display as combination with last 3 digit(XXX) of ASSETLIST ID and last 4 digit(YYYY) of ASSET ID (ex:XXX-YYYY) |
| 6 | Date of each ASSET captured | dc:date in PASS ASSET MANIFEST | Display close to each ASSET | Mandatory |

コメント [y14]: Change ASSET ID to Image ID

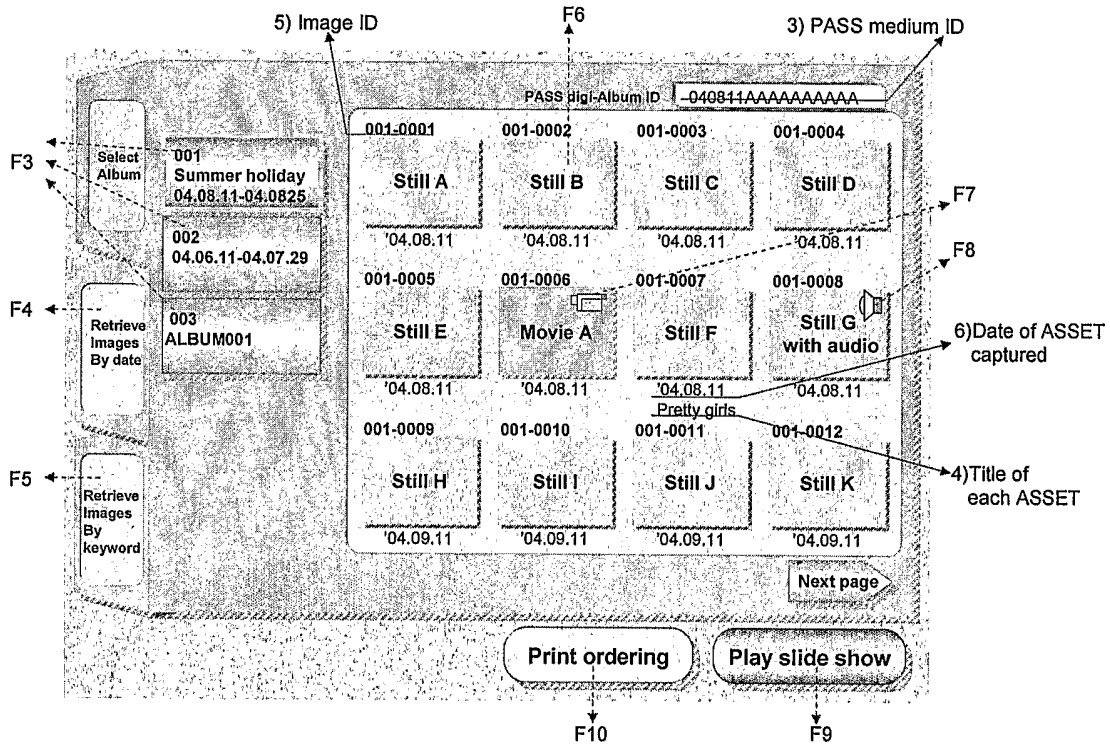
<Functions on index display screen>

| | Function on index display screen | Detail of function | Mandatory function or Optional function |
|---|---|---|---|
| F3 | Function to display ASSETs by selecting each album | Allow users to select album in PASS digi-album and display all ASSETs in selected album as index display | Mandatory function |
| F4 | Function to retrieve and display ASSETs by date information | Allow users to retrieve and display ASSETs by date information. Refer to 5.3.1. | Optional function |
| F5 | Function to retrieve and display ASSETs by keyword information | Allow users to retrieve and display ASSETs by keyword information. Refer to 5.3.2. | Optional function |
| F6 | Function to display selected ASSET as one by one | Allow uses to select an ASSET on index display screen and display selected ASSET as one by one. Refer to 5.2.5. | Mandatory function |
| F7 | Function to display any icon or annotation for Movie asset | Display any icon or any annotation for movie asset | Optional function |

| | Function on index display screen | Detail of function | Mandatory function or Optional function |
|---|---|---|---|
| F8 | Function to display any icon or annotation for Still asset with Audio | Display any icon or any annotation for still asset with audio | Optional function |
| F9 | Function to start playing slide show | Allow users to go to play slide show function. Refer to 5.2.4. | Mandatory function |
| F10 | Function for print ordering | Allow users to go to print ordering function. Refer to 6 | Optional function |

By select each album button in album list area, all ASSET shall be displayed according to each album's PASS PLAYLIST MANIFEST.

<An example of index display screen>



*5.4.4 Display images from each album as slide show*

Playback component shall prepare a function button to start playing slide show for selected album.

<How to display ASSETs on slide show playing screen>

Playback component can prepare such "play slide show" button on index display screen such as the above-mentioned example.

By starting slide show playing function, slide show shall start according to PASS PLAYLIST MANIFEST of selected albumand PASS ASSET MANIFEST which is linked with PASS PLAYLIST MANIFEST.

- When ASSET file is still, accelerator files of still images in DISPLAY directory or original still ASSET files in ASSET roll directory are used for slide show display of still ASSET.
- When ASSET file is movie, original motion files in ASSET ROLL directory are used for slide show display of motion ASSET.
- When ASSET file is still with audio, accelerator file of still images in DISPLAY directory or original still ASSET files in ASSET roll directory are used and audio file which has a relation with such still ASSET are played during such still ASSET display according to PASS PLAYLIST MANIFEST.

<Play slide show>

Playback component shall interpret PASS PLAYLISTMANIFEST of selected Album and play slide show according to described ASSET sequence, playing time for each ASSET, transition effect, and background music. Description of ASSET sequence, playing time for each ASSET, transition effect, and background music is refered to MPV specification.

<Items to display on slide show play>

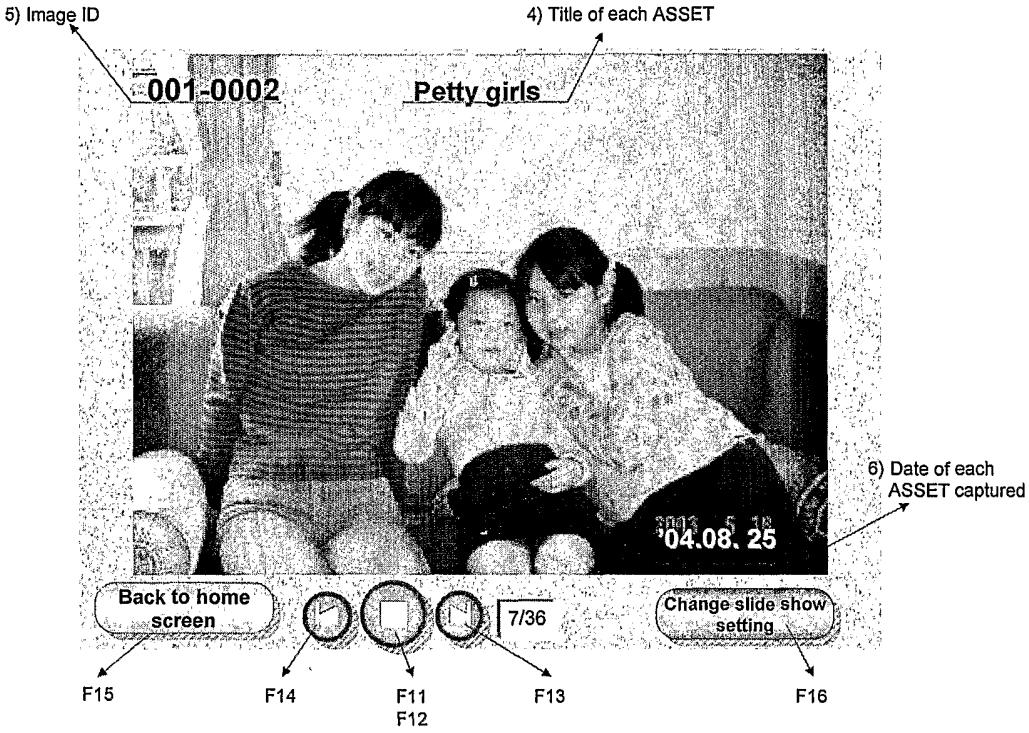
| | Mandatory items to display on slide show | XML tag name in PASS ASSET MANIFEST | Capability to be displayed by Playback component |
|---|---|---|---|
| 4 | Title of each ASSET | dc:title | Optional |
| 5 | Image ID | ASSET LIST ID and ASSET ID are used In order to display Image ID | Mandatory to display as combination with last 3 digit(XXX) of ASSETLIST ID and last 4 digit(YYYY) of ASSET ID (ex:XXX-YYYY) |
| 6 | Date of each ASSET captured | dc:date | Mandatory |

コメント [y15]: Change ASSET ID to Image ID

<Functions on slide show playing screen>

| | Function on slide show play screen | Detail | Mandatory function or Optional function |
|---|---|---|---|
| F11 | Function to play slide show | Allow users to play slide show when slide show is paused. | Mandatory function |
| F12 | Function to pause slide show | Allow users to pause slide show when slide show is playing. | Mandatory function |
| F13 | Function to skip to next ASSET | Allow users to skip to next ASSET display | Mandatory function |
| F14 | Function to skip to previous ASSET | Allow users to skip to previous ASSET display. | Mandatory function |
| F15 | Function to go back to index display screen | Allow user to stop playing slide show and go back to index display screen | Mandatory function |
| F16 | Function to change slide show setting | Allow users to change the slide show setting , for example;<br>-change slide interval<br>-change slide effect(transition)<br>-change background music | Optional function |

<An example of slide show play screen >




*5.4.5 Display images from each album as one by one*

Playback component shall have a function to display selected ASSET as one by one.

<How to display ASSET as one by one>

By selecting any ASSET on index display screen, selected ASSET can be displayed as one by one.

- When ASSET file to display is still, accelerator files of still images in DISPLAY directory or or original still ASSET files in ASSET roll directory are used.
- When ASSET file is movie, original motion files in ASSET ROLL directory are used for slide show display of motion ASSET.
- When ASSET file is still with audio, accelerator file of still images in DISPLAY directory or original still ASSET files in ASSET roll directory are used.
- Playback component shall rotate such still ASSET according to orientation information in PASS ASSET MANIFEST and display rotated image.

コメント [y16]: Remove description of conversion to sRGB

<Items to display on ASSET display screen as one by one>

| | Items when display ASSET one by one | XML tag name in PASS ASSET MANIFEST | Capability to be displayed by Playback component |
|---|---|---|---|
| 4 | Title of each ASSET | dc:title | Optional |
| 5 | Image ID | ASSET LIST ID and ASSET ID are used In order to display Image ID | Mandatory to display as combination with last 3 digit(XXX) of ASSETLIST ID and last 4 digit(YYYY) of ASSET ID (ex:XXX-YYYY) |
| 6 | Date fo each ASSET captured | dc:date | Mandatory |
| 7 | Creator of each ASSET | dc:creator | Optional |
| 8 | Description of each ASSET | dc:description | Optional |
| 9 | Location of Still Image | dig35:IMAGE_CREATION dig35:CAMERA_CAPTURE dig35:CAMERA_SETTINGS dig35:CAMERA_LOCATION | Optional |
| 10 | Person name for each ASSET | dig35:CONTENT_DESCRIPTION dig35:PERSON dig35:PERSON_NAME dig35:NAME_COMP | Optional |
| 11 | Position (for each person) | dig35:CONTENT_DESCRIPTION dig35:PERSON dig35:POSITION | Optional |
| 12 | Comment (for each person) | dig35:CONTENT_DESCRIPTION dig35:PERSON dig35:COMMENT | Optional |
| 13 | Thing name for each ASSET | dig35:CONTENT_DESCRIPTION dig35:THING dig35:NAME | Optional |
| 14 | Position (for each thing) | dig35:CONTENT_DESCRIPTION dig35:THING dig35:POSITION | Optional |
| 15 | Comment (for each thing) | dig35:CONTENT_DESCRIPTION dig35:THING dig35:COMMENT | Optional |
| 16 | Location for each ASSET | dig35:CONTENT_DESCRIPTION dig35:LOCATION | Optional |
| 17 | Event type for each ASSET | dig35:CONTENT_DESCRIPTION dig35:EVENT dig35:EVENT_TYPE | Optional |
| 18 | Description concerning event for each ASSET | dig35:CONTENT_DESCRIPTION dig35:EVENT dig35:DESCRIPTION | Optional |
| 19 | Comments for each event | dig35:CONTENT_DESCRIPTION dig35:EVENT dig35:COMMENT | Optional |

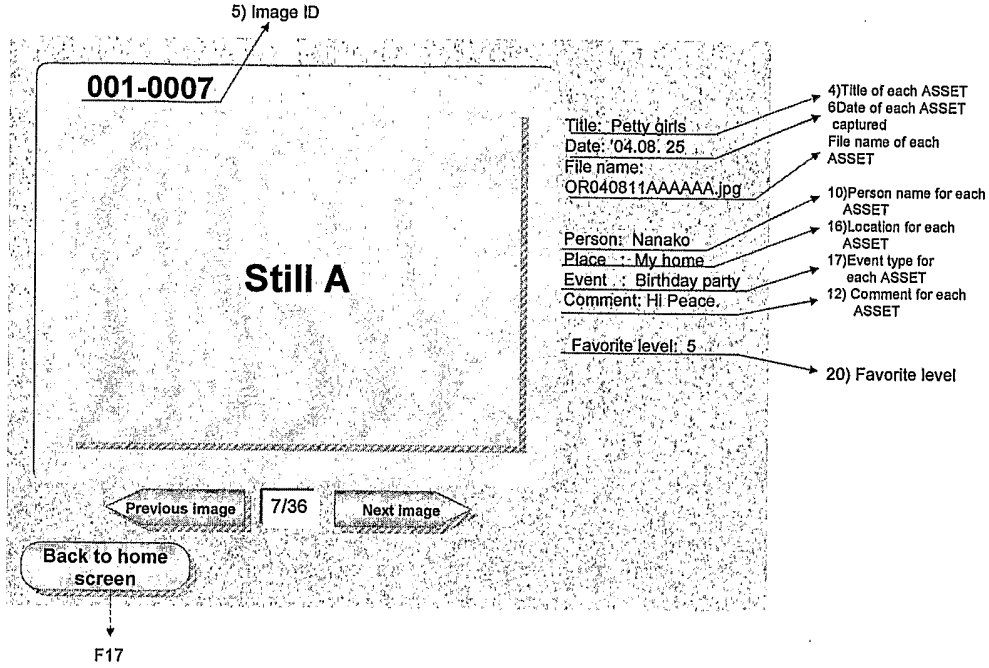
コメント [y17]: Change ASSET ID to Image ID

| | Items when display ASSET one by one | XML tag name in PASS ASSET MANIFEST | Capability to be displayed by Playback component |
|---|---|---|---|
| 20 | Favorite level | | Optional |

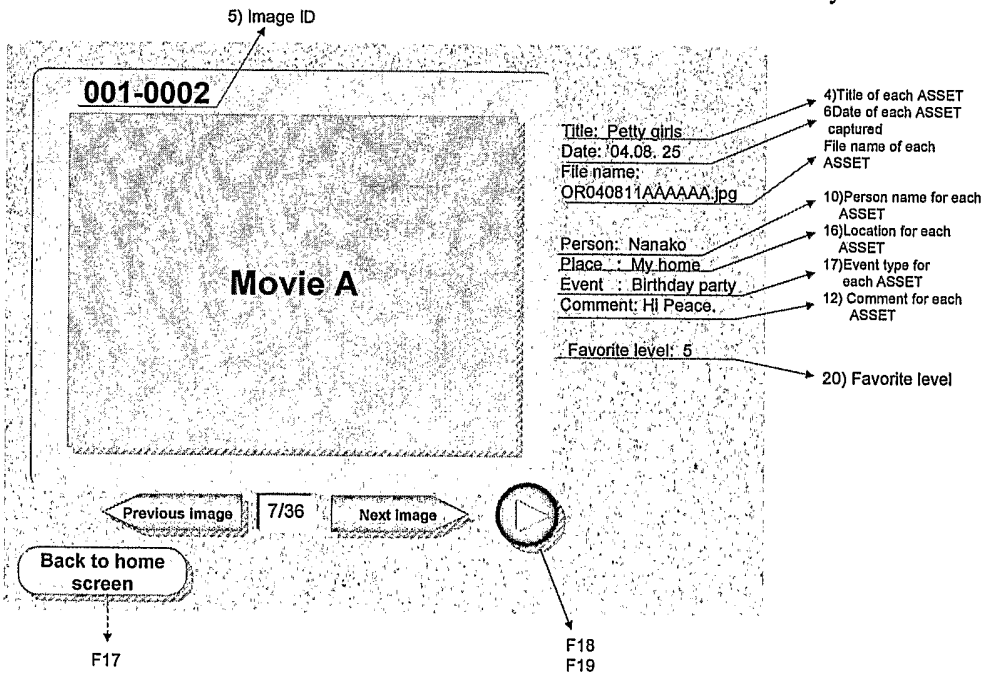
<Function when displaying selected ASSET as one by one>

| | Mandatory function on display ASSET as one by one | Detail | Mandatory function or Optional function |
|---|---|---|---|
| F17 | Function to back to index display screen | Allow users to go back to index display screen. | Mandatory function |
| F18 | Function to play movie or still with audio | It is only active when movie or still with audio are selected. Allow users to play movie or still with audio when not playing. | Mandatory function |
| F19 | Function to stop movie or still with audio | It is only active when movie or still with audio are selected. Allow users to stop movie or still with audio when playing. | Mandatory function |

<An example for displaying still ASSET as one by one>




<An example for displaying motion ASSET or still ASSET with audio as one by one>



*5.4.6 Display metadata for each ASSET*

Playback component can display metadata which are described in PASS ASSET MANIFEST of PASS digi-Album on index display screen, slide show playing screen, display screen as one by one and so on..

***5.5 Retrieve and display images (as on optional function)***

Playback component can display retrieved ASSETs by date of ASSET captured, keyword for each ASSET and favorite level for each ASSET.

*5.5.1 Retrieve and display images by date*

<How to display retrieved ASSETs by date on index display screen>

Playback component shall read PASS ASSET MANIFEST and recognize date information of each ASSET captured from PASS ASSET MANIFEST or exif date and time of original data generation (36867).

Playback component can have a function to classify and display ASSET by date information.

As date information, the following category is available as optional function;

- by year
- by month
- by week
- by date

Playback component can recognize the path for each image files for display from PASS ASSET MANIFEST which is related to selected date to retrieve and try to display them.

- When ASSET file is still or still with audio, accelerator files of still images in DISPLAY directory or exif thumbnail are used for display as index display.
- When ASSET file is movie, original motion files in ASSET ROLL directory are used for display as index display.
- When ASSET file is movie or still with audio, Playback component can display any annotation or symbol icon which indicate movie or still with audio.

<Items to display on index display screen when retrieving images by date>

| | Items to display On index display screen | XML tag name | Location to display | Capability to be displayed by Playback component |
|---|---|---|---|---|
| 3 | PASS medium ID | Pass:mediumID In PASS INDEX MANIFEST | On index display screen of each album | Optional |
| 4 | Title of each ASSET | dc:title in PASS ASSET MANIFEST | Display close to each ASSET | Optional |

| | Items to display On index display screen | XML tag name | Location to display | Capability to be displayed by Playback component |
|---|---|---|---|---|
| 5 | Image ID | ASSET LIST ID and ASSET ID are used In order to display Image ID | Display close to each ASSET | Mandatory to display as combination with last 3 digit(XXX) of ASSETLIST ID and last 4 digit(YYYY) of ASSET ID (ex:XXX-YYYY) |
| 6 | Date of each ASSET captured | dc:date in PASS ASSET MANIFEST | Display close to each ASSET | Mandatory |

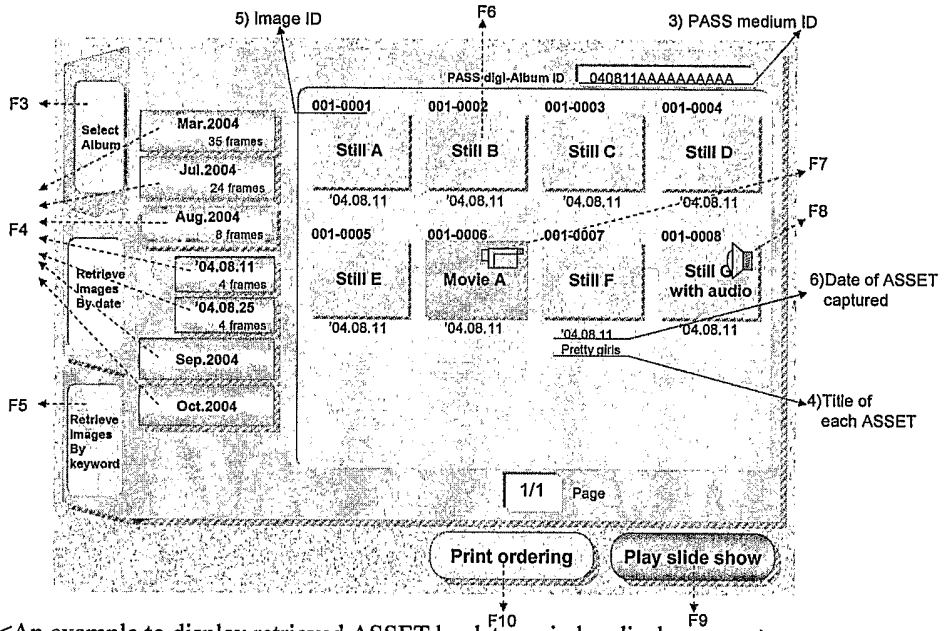
コメント [y18]: Change ASSET ID to Image ID

<Functions on index display screen>

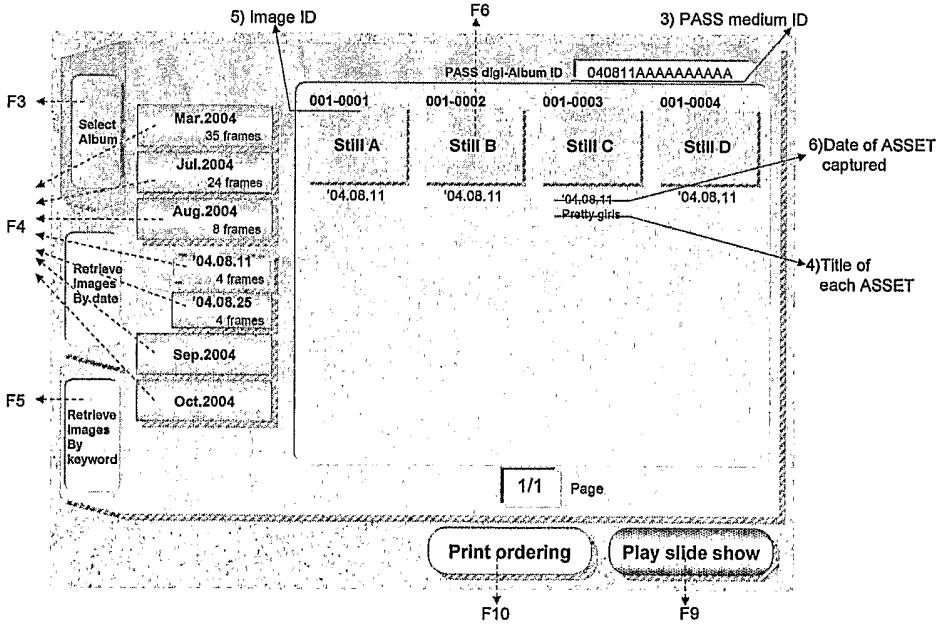
| | Function on index display screen | Detail of function | Mandatory function or Optional function |
|---|---|---|---|
| F4 | Function to retrieve and display ASSETs by date information | Allow users to retrieve and display ASSETs by date information. | Optional function |
| F3 | Function to display ASSETs by selecting each album | Allow users to select album in PASS digi-album and display all ASSETs in selected album as index display . Refer to 5.4.3. | Mandatory function |
| F5 | Function to retrieve and display ASSETs by keyword information | Allow users to retrieve and display ASSETs by keyword information. Refer to 5.3.2. | Optional function |
| F6 | Function to display selected ASSET as one by one | Allow uses to select an ASSET on index display screen and display selected ASSET as one by one. Refer to 5.2.5. | Mandatory function |
| F7 | Function to display any icon or annotation for Movie asset | Display any icon or any annotation for movie asset | Optional function |
| F8 | Function to display any icon or annotation for Still asset with Audio | Display any icon or any annotation for still asset with audio | Optional function |
| F9 | Function to start playing slide show | Allow users to go to play slide show function. Refer to 5.2.4. | Mandatory function |
| F10 | Function for print ordering | Allow users to go to print ordering function. Refer to 6 | Optional function |

By select each date button in album list area, all ASSET can be displayed according to date information in PASS ASSET MANIFEST or exif date and time of original data generation (36867).

<An example to display retrieved ASSET by month on index display screen>




<An example to display retrieved ASSET by date on index display screen>



*5.5.2 Retrieve and display images by keywords*

Playback component can recognize some metadata for keywords to retrieve ASSET from PASS ASSET MANIFEST.

<How to retrieve ASSET by keywords>

The following metadata can be used as keywords to retrieve ASSET in PASS ASSET MANIFEST ;

| | Metadata for keywords to retrieve ASSET | XML tag name in PASS ASSET MANIFEST |
|---|---|---|
| 4 | Title of each ASSET | dc:title |
| 6 | Date fo each ASSET captured | dc:date |
| 7 | Creator of each ASSET | dc:creator |
| 8 | Description of each ASSET | dc:description |
| 10 | Person name for each ASSET | dig35:CONTENT_DESCRIPTION<br>dig35:PERSON<br>dig35:PERSON_NAME<br>dig35:NAME_COMP |
| 11 | Position<br>(for each person) | dig35:CONTENT_DESCRIPTION<br>dig35:PERSON<br>dig35:POSITION |
| 12 | Comment<br>(for each person) | dig35:CONTENT_DESCRIPTION<br>dig35:PERSON<br>dig35:COMMENT |
| 13 | Thing name for each ASSET | dig35:CONTENT_DESCRIPTION<br>dig35:THING<br>dig35:NAME |
| 14 | Position<br>(for each thing) | dig35:CONTENT_DESCRIPTION<br>dig35:THING<br>dig35:POSITION |
| 15 | Comment<br>(for each thing) | dig35:CONTENT_DESCRIPTION<br>dig35:THING<br>dig35:COMMENT |
| 16 | Location for each ASSET | dig35:CONTENT_DESCRIPTION<br>dig35:LOCATION |
| 17 | Event type for each ASSET | dig35:CONTENT_DESCRIPTION<br>dig35:EVENT<br>dig35:EVENT_TYPE |
| 18 | Description concerning event for each ASSET | dig35:CONTENT_DESCRIPTION<br>dig35:EVENT<br>dig35:DESCRIPTION |
| 19 | Comments for each event | dig35:CONTENT_DESCRIPTION<br>dig35:EVENT<br>dig35:COMMENT |
| 20 | Favorite level | |

Playback component can have a function to input some of the above-mentioned keywords or a function to select some of the above-mentioned keywords among such keywords dictionary.

Playback component can have a function to recognize keywords and display ASSET whose metadata of such keyword from PASS ASSET MANIFEST is same.

Playback component can recognize the path for each image files for display from PASS ASSET MANIFEST which is related to input metadata to retrieve as keyword and try to display them.

- When ASSET file is still or still with audio, accelerator files of still images in DISPLAY directory or exif thumbnail are used for display as index display.
- When ASSET file is movie, original motion files in ASSET ROLL directory are used for display as index display.
- When ASSET file is movie or still with audio, Playback component can display any annotation or symbol icon which indicate movie or still with audio.
-

<Items to display on index display screen when retrieving images by keywords>

| | Items on index display screen when retrieving by keywords | XML tag name in PASS ASSET MANIFEST | Capability to be displayed by Playback component |
|---|---|---|---|
| 3 | PASS medium ID | Pass:mediumID (In PASS INDEX MANIFEST) | Optional |
| 4 | Title of each ASSET | dc:title | Optional |
| 5 | Image ID | ASSET LIST ID and ASSET ID are used In order to display Image ID | Mandatory to display as combination with last 3 digit(XXX) of ASSETLIST ID and last 4 digit(YYYY) of ASSET ID (ex:XXX-YYYY) |
| 6 | Date fo each ASSET captured | dc:date | Mandatory |
| 7 | Creator of each ASSET | dc:creator | Optional |
| 8 | Description of each ASSET | dc:description | Optional |
| 9 | Location of Still Image | dig35:IMAGE_CREATION dig35:CAMERA_CAPTURE dig35:CAMERA_SETTINGS dig35:CAMERA_LOCATION | Optional |
| 10 | Person name for each ASSET | dig35:CONTENT_DESCRIPTION dig35:PERSON dig35:PERSON_NAME dig35:NAME_COMP | Optional |
| 11 | Position (for each person) | dig35:CONTENT_DESCRIPTION dig35:PERSON dig35:POSITION | Optional |
| 12 | Comment (for each person) | dig35:CONTENT_DESCRIPTION dig35:PERSON dig35:COMMENT | Optional |
| 13 | Thing name for each ASSET | dig35:CONTENT_DESCRIPTION dig35:THING dig35:NAME | Optional |

コメント [y19]: Change ASSET ID to Image ID

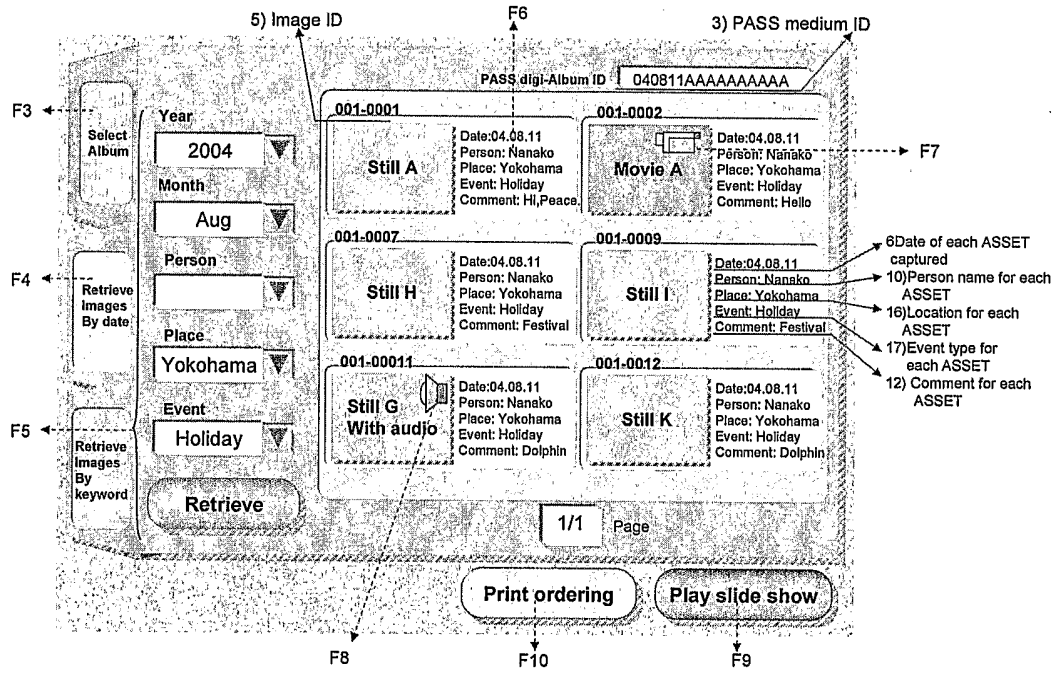
| | Items on index display screen when retrieving by keywords | XML tag name in PASS ASSET MANIFEST | Capability to be displayed by Playback component |
|---|---|---|---|
| 14 | Position (for each thing) | dig35:CONTENT_DESCRIPTION dig35:THING dig35:POSITION | Optional |
| 15 | Comment (for each thing) | dig35:CONTENT_DESCRIPTION dig35:THING dig35:COMMENT | Optional |
| 16 | Location for each ASSET | dig35:CONTENT_DESCRIPTION dig35:LOCATION | Optional |
| 17 | Event type for each ASSET | dig35:CONTENT_DESCRIPTION dig35:EVENT dig35:EVENT_TYPE | Optional |
| 18 | Description concerning event for each ASSET | dig35:CONTENT_DESCRIPTION dig35:EVENT dig35:DESCRIPTION | Optional |
| 19 | Comments for each event | dig35:CONTENT_DESCRIPTION dig35:EVENT dig35:COMMENT | Optional |
| 20 | Favorite level | | Optional |

<Functions on index display screen when retrieving images by keywords>

| | Function on index display screen | Detail of function | Mandatory function or Optional function |
|---|---|---|---|
| F5 | Function to retrieve and display ASSETs by keyword information | Allow users to retrieve and display ASSETs by keyword information. | Optional function |
| F3 | Function to display ASSETs by selecting each album | Allow users to select album in PASS digi-album and display all ASSETs in selected album as index display . Refer to 5.4.3. | Mandatory function |
| F4 | Function to retrieve and display ASSETs by date information | Allow users to retrieve and display ASSETs by date information. 5.5.1. | Optional function |
| F6 | Function to display selected ASSET as one by one | Allow uses to select an ASSET on index display screen and display selected ASSET as one by one. Refer to 5.2.5. | Mandatory function |
| F7 | Function to display any icon or annotation for Movie asset | Display any icon or any annotation for movie asset | Optional function |
| F8 | Function to display any icon or annotation for Still asset with Audio | Display any icon or any annotation for still asset with audio | Optional function |

| | Function on index display screen | Detail of function | Mandatory function or Optional function |
|---|---|---|---|
| F9 | Function to start playing slide show | Allow users to go to play slide show function. Refer to 5.2.4. | Mandatory function |
| F10 | Function for print ordering | Allow users to go to print ordering function. Refer to 6 | Optional function |

<An example of displaying retrieved ASSET by keywords on index display screen>

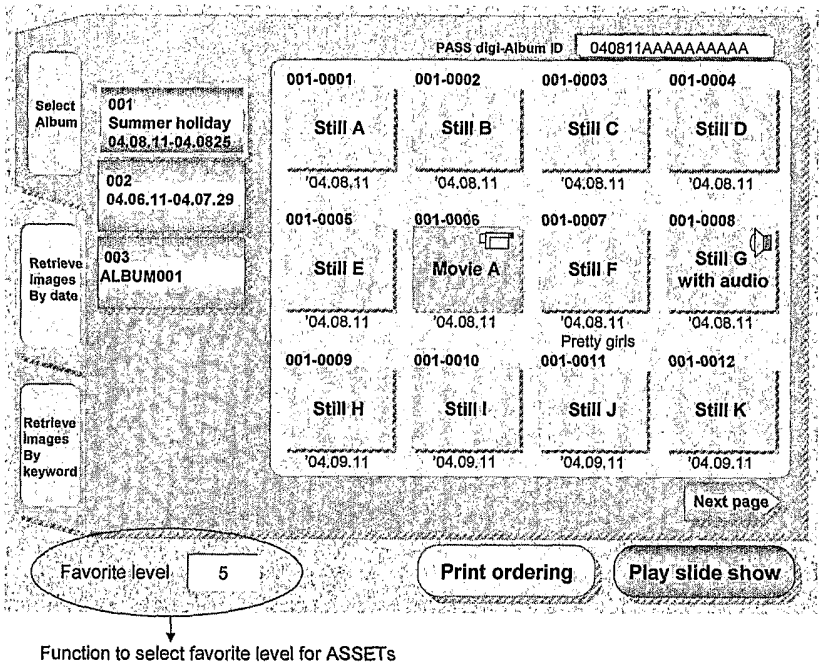


*5.5.3 Display ASSETs according to favorite level*

Playback component can display ASSETs according to favorite level described in PASS ASSET MANIFEST.

Playback component can select favorite level and display ASSETs of selected favorite level from level 1 to level 5.

<An example for selecting favorite level of ASSETs>



## 6 *Function requirements for PASS printing component*

### *6.1 Display ASSET from Album in PASS digi-Album)*

Printing component shall have same function with 5.2.3. in Function requirement for PASS Playback component to display ASSET from each album in PASS digi-Album as index display for the purpose of selecting ASSET to print.

Printing component shall have same function with 5.2.5. in Function requirement for PASS Playback component to display selected ASSET as one by one.

### *6.2 Display retrieved ASSET (as an optional function)*

Printing component can have same function with 5.3.1. in Function requirement for PASS Playback component to display retrieved ASSET by date information for the purpose of selecting ASSET to print.

Printing component can have same function with 5.3.2. in Function requirement for PASS Playback component to display retrieved ASSET by keywords for the purpose of selecting selected ASSET to print.

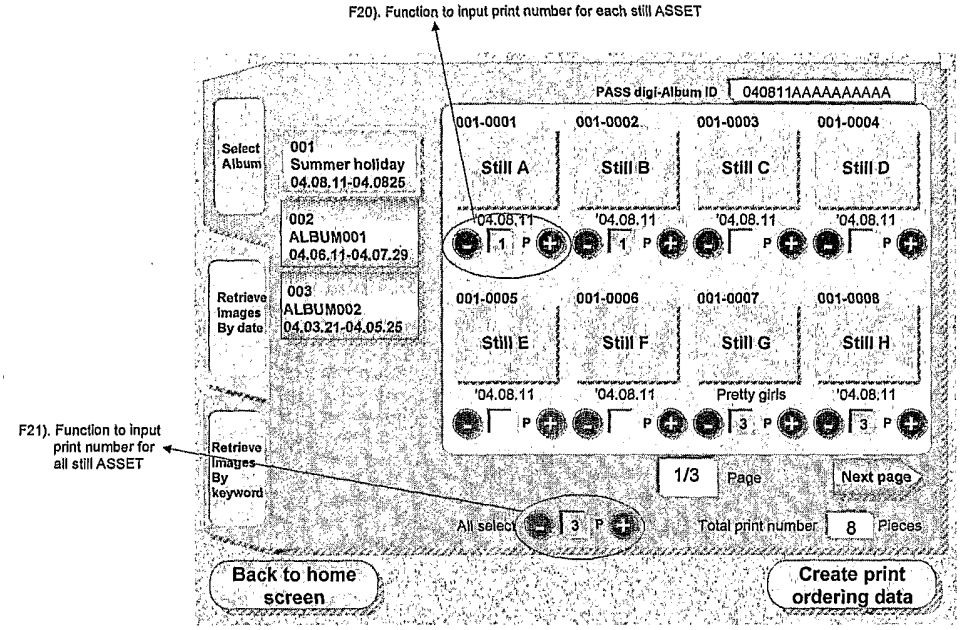
### *6.3 Select ASSETs to print and input print number*

Printing component shall prepare the function to select ASSET to print and input print number for selected still ASSET.

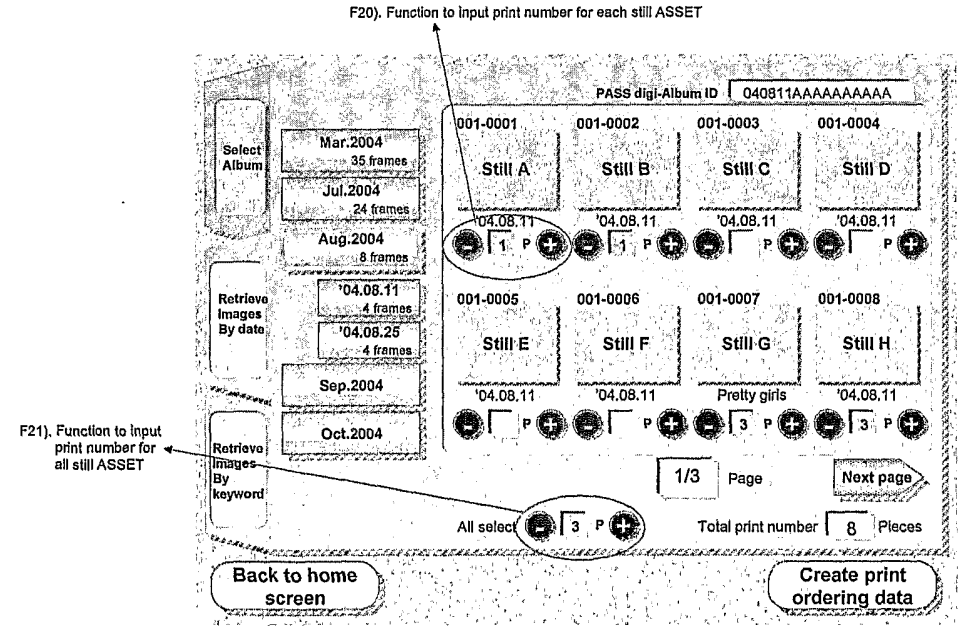
<Functions to input print ordering information on ASSET selecting screen for print>

| | Functions to input print ordering information | Detail of function | Mandatory function or Optional function |
|---|---|---|---|
| F20 | Function to input print number for each still ASSET | Allow users to input print number for each still ASSET | Mandatory function |
| F21 | Function to input print number for all still ASSET | Allow users to input print number for all still ASSET at one time. | Optional function |

<An example of selecting ASSET to print from each album on ASSET selecting screen for print>




<An example of selecting ASSET to print from retrieved date on ASSET selecting screen for print>



*6.4 Associate a high resolution ASSET with selection method*

Printing component shall associate high resolution file of selected ASSET to print from PASS ASSET MANIFEST.

コメント [y20]: Remove description of output ordering data to memory card and send ordering data online.

CLAIMS

1. An image retrieving apparatus for retrieving a plurality of original images from a recording medium on which a plurality of original images taken are recorded, comprising:

an index retrieving unit for retrieving an index manifest file from the recording medium;

an asset manifest retrieving unit for retrieving an asset manifest file from the recording medium by using a path, stored in the retrieved index manifest file, to the asset manifest file; and

an image retrieving unit for retrieving at least a part of the plurality of original images from the recording medium by using a path, stored in the retrieved asset manifest file, to each of the plurality of original images,

wherein the recording medium comprises:

the plurality of original images;

the asset manifest file storing the path to each of the plurality of original images; and

the index manifest file storing the path to the asset manifest file, and

the index manifest file is stored on a predetermined path which is not different for each recording medium.

2. An image retrieving apparatus as claimed in claim 1 further comprising:

an image display unit for displaying a retrieved display image, wherein

the recording medium further comprises a plurality of display images generated by decreasing resolution of the plurality of original images,

the asset manifest file further stores a path to each of the plurality of display images, and

said image retrieving unit retrieves at least a part of the plurality of display images from the recording medium by

using the path, stored in the retrieved asset manifest file, to each of the plurality of display images.

3. An image retrieving apparatus as claimed in claim 2 further comprising:

an album manifest retrieving unit for retrieving an album manifest file from the recording medium by using a path, stored in the retrieved index manifest file, to the album manifest file, wherein

the recording medium further comprises the album manifest file which determines a displaying order of at least a part of the plurality of the original images,

the index manifest file further stores the path to the album manifest file,

said image retrieving unit retrieves the display image in case the path to the display image generated from the original image is stored in the asset manifest file, or the original image in case the path to the display image generated from the original image is not stored in the asset manifest file, for each of the original images which should be displayed according to the displaying order determined by the retrieved album manifest file, and

said image display unit displays the display image or the original image.

4. An image retrieving method for retrieving a plurality of original images from a recording medium on which a plurality of original images taken are recorded, comprising:

an index retrieving step of retrieving an index manifest file from the recording medium;

an asset manifest retrieving step of retrieving an asset manifest file from the recording medium by using a path, stored in the retrieved index manifest file, to the asset manifest file; and

an image retrieving step of retrieving at least a part of the plurality of original images from the recording medium

by using a path, stored in the retrieved asset manifest file, to each of the plurality of original images,

wherein the recording medium comprises:

the plurality of original images;

the asset manifest file storing the path to each of the plurality of original images; and

the index manifest file storing the path to the asset manifest file, and

the index manifest file is stored on a predetermined path which is not different for each recording medium.

5. An image retrieving method as claimed in claim 4 further comprising:

an image display step of displaying a retrieved display image, wherein

the recording medium further comprises a plurality of display images generated by decreasing resolution of the plurality of original images,

the asset manifest file further stores a path to each of the plurality of display images, and

during said image retrieving step, at least a part of the plurality of display images is retrieved from the recording medium by using the path, stored in the retrieved asset manifest file, to each of the plurality of display images.

6. An image retrieving method as claimed in claim 5 further comprising:

an album manifest retrieving step of retrieving an album manifest file from the recording medium by using a path, stored in the retrieved index manifest file, to the album manifest file, wherein

the recording medium further comprises the album manifest file which determines a displaying order of at least a part of the plurality of the original images,

the index manifest file further stores the path to the album manifest file,

during said image retrieving step, the display image is retrieved in case the path to the display image generated from the original image is stored in the asset manifest file, or the original image is retrieved in case the path to the display image generated from the original image is not stored in the asset manifest file, for each of the original images which should be displayed according to the displaying order determined by the retrieved album manifest file, and

during said image display step, the display image or the original image is displayed.

7. A recording medium on which a plurality of original images taken are recorded, comprising:

a plurality of original images;

an asset manifest file storing a path to each of said plurality of original images; and

an index manifest file storing a path to said asset manifest file, wherein

said index manifest file is stored on a predetermined path which is not different for each recording medium.

8. A recording medium as claimed in claim 7 further comprising:

a plurality of display images generated by decreasing resolution of said plurality of original images, wherein

said asset manifest file further stores a path to each of said plurality of display images.

9. A recording medium as claimed in claim 8 further comprising:

an album manifest file which determines a displaying order of at least a part of said plurality of original images, wherein said index manifest file further stores the path to said album manifest file.

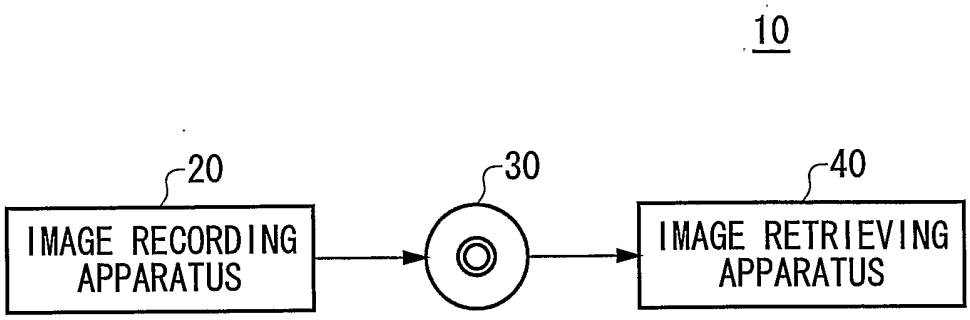

10
20
IMAGE RECORDING APPARATUS
30
40
IMAGE RETRIEVING APPARATUS

FIG. 1

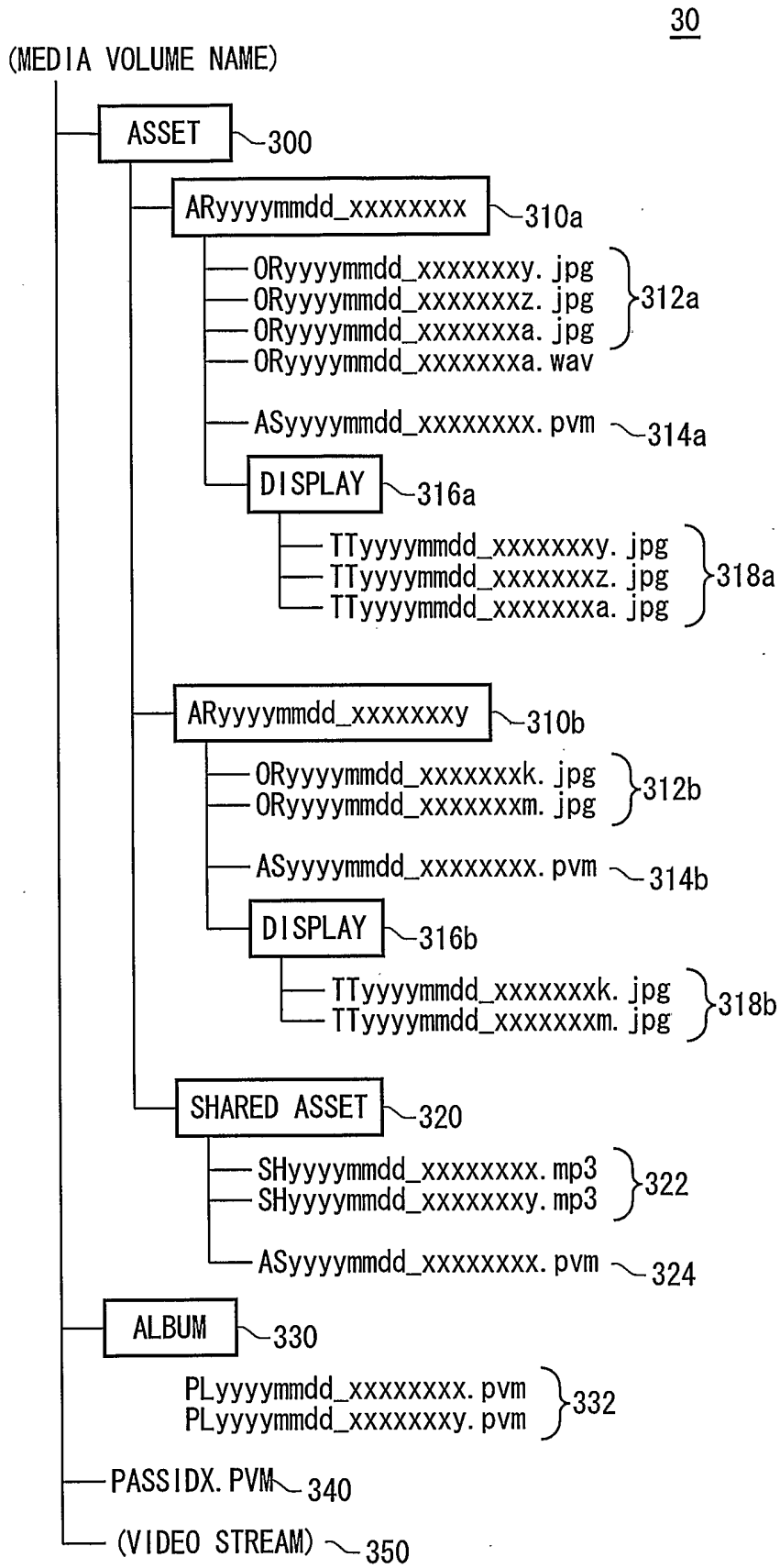

30
(MEDIA VOLUME NAME)
ASSET
300
ARyyyymmdd_xxxxxxxx
310a
ORyyyymmdd_xxxxxxxy. jpg
ORyyyymmdd_xxxxxxxz. jpg
ORyyyymmdd_xxxxxxxa. jpg
312a
ORyyyymmdd_xxxxxxxa. wav
ASyyyymmdd_xxxxxxxx. pvm
314a
DISPLAY
316a
TTyyyymmdd_xxxxxxxy. jpg
TTyyyymmdd_xxxxxxxz. jpg
TTyyyymmdd_xxxxxxxa. jpg
318a
ARyyyymmdd_xxxxxxxy
310b
ORyyyymmdd_xxxxxxxk. jpg
ORyyyymmdd_xxxxxxxm. jpg
312b
ASyyyymmdd_xxxxxxxx. pvm
314b
DISPLAY
316b
TTyyyymmdd_xxxxxxxk. jpg
TTyyyymmdd_xxxxxxxm. jpg
318b
SHARED ASSET
320
SHyyyymmdd_xxxxxxxx. mp3
SHyyyymmdd_xxxxxxxy. mp3
322
ASyyyymmdd_xxxxxxxx. pvm
324
ALBUM
330
PLyyyymmdd_xxxxxxxx. pvm
PLyyyymmdd_xxxxxxxy. pvm
332
PASSIDX. PVM
340
(VIDEO STREAM)
350

FIG. 2

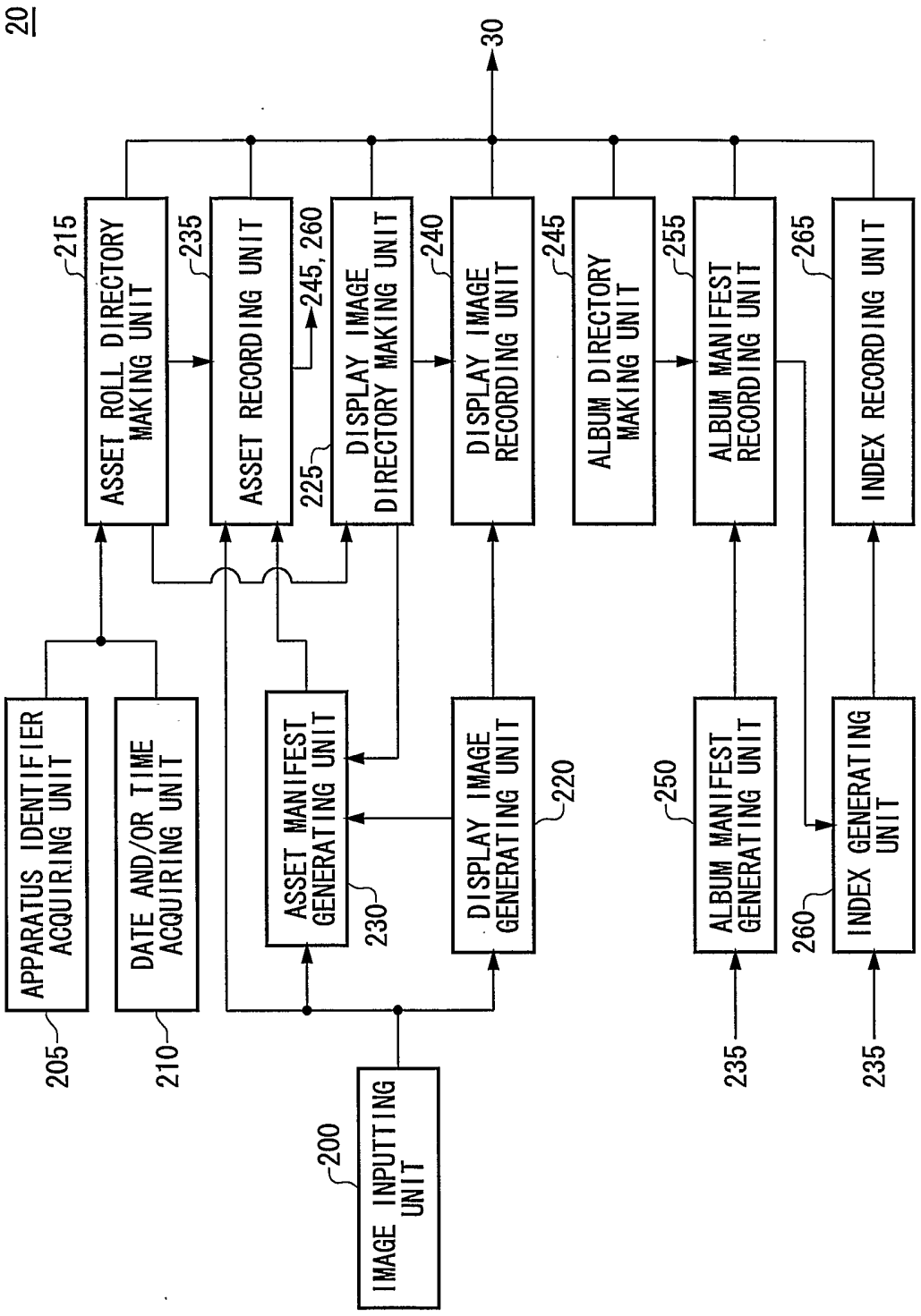

20
30
ASSET ROLL DIRECTORY MAKING UNIT
215
ASSET RECORDING UNIT
235
245, 260
DISPLAY IMAGE DIRECTORY MAKING UNIT
225
240
DISPLAY IMAGE RECORDING UNIT
245
ALBUM DIRECTORY MAKING UNIT
255
ALBUM MANIFEST RECORDING UNIT
265
INDEX RECORDING UNIT
APPARATUS IDENTIFIER ACQUIRING UNIT
205
DATE AND/OR TIME ACQUIRING UNIT
210
ASSET MANIFEST GENERATING UNIT
230
DISPLAY IMAGE GENERATING UNIT
220
ALBUM MANIFEST GENERATING UNIT
250
INDEX GENERATING UNIT
260
IMAGE INPUTTING UNIT
200
235
235

FIG. 3

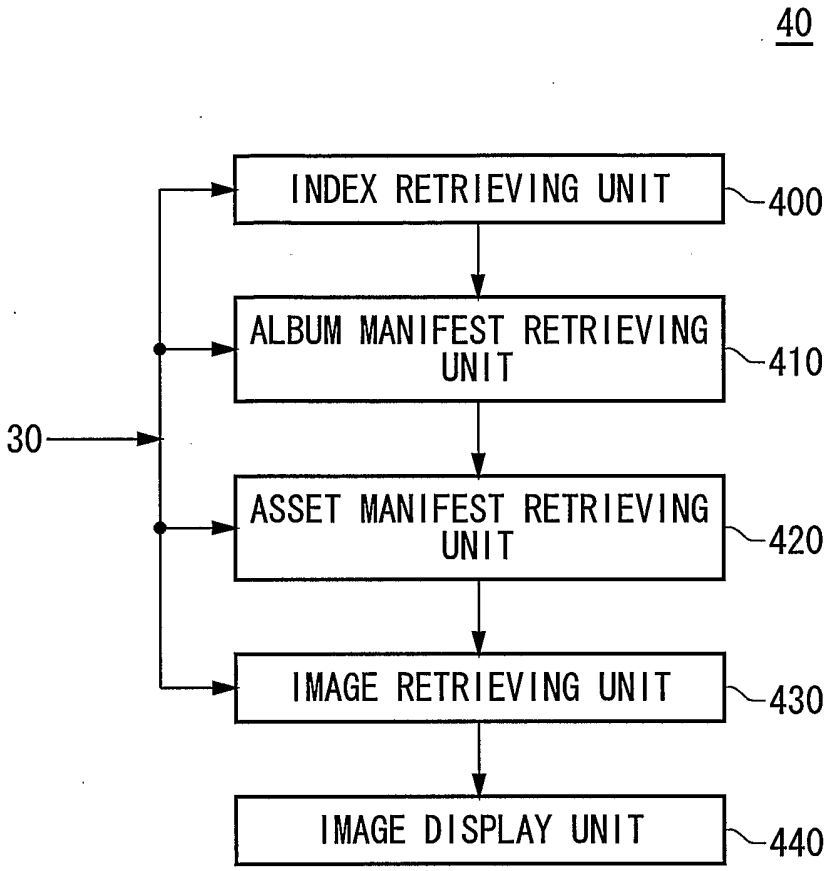

40
INDEX RETRIEVING UNIT
400
ALBUM MANIFEST RETRIEVING UNIT
410
30
ASSET MANIFEST RETRIEVING UNIT
420
IMAGE RETRIEVING UNIT
430
IMAGE DISPLAY UNIT
440

FIG. 4

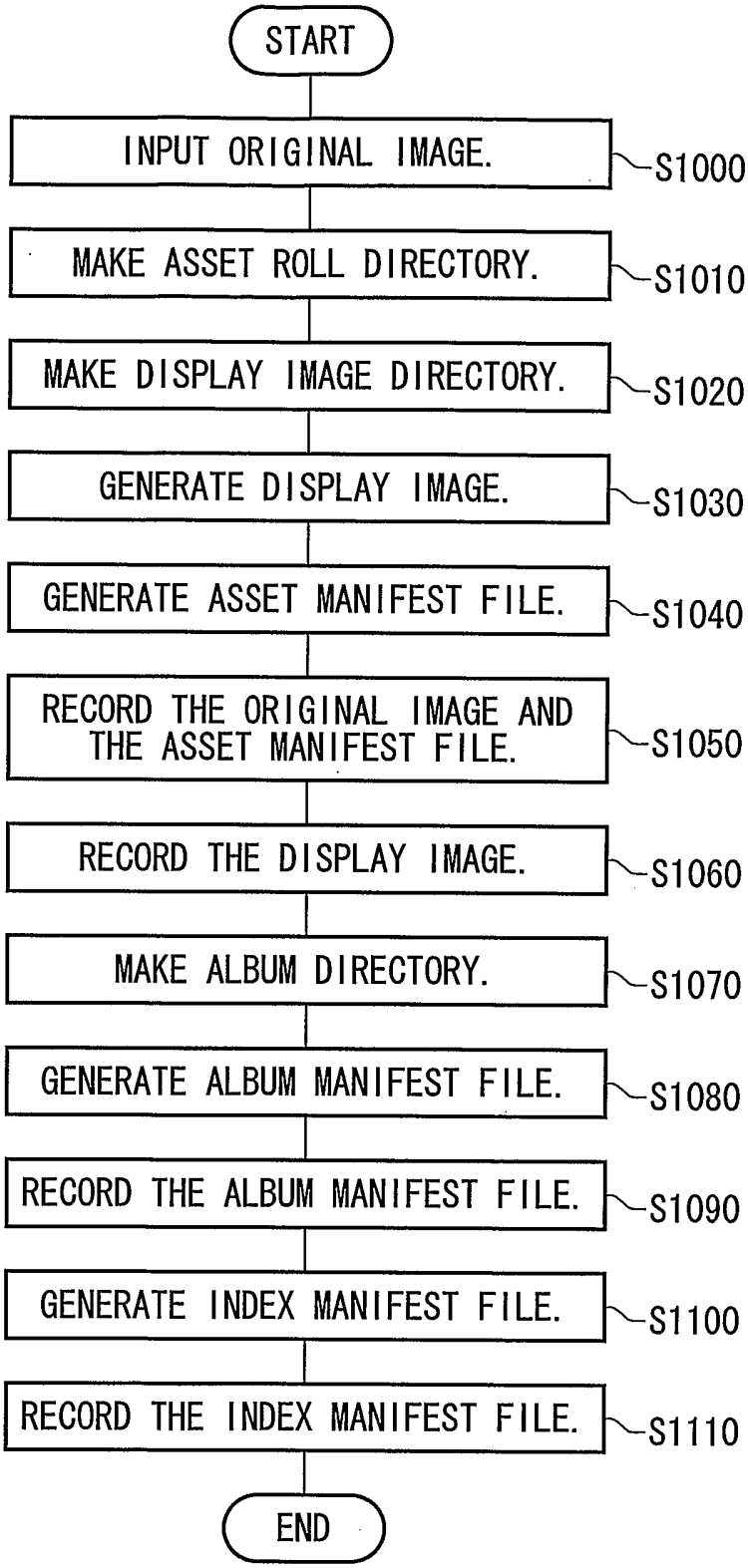

START
INPUT ORIGINAL IMAGE.
S1000
MAKE ASSET ROLL DIRECTORY.
S1010
MAKE DISPLAY IMAGE DIRECTORY.
S1020
GENERATE DISPLAY IMAGE.
S1030
GENERATE ASSET MANIFEST FILE.
S1040
RECORD THE ORIGINAL IMAGE AND THE ASSET MANIFEST FILE.
S1050
RECORD THE DISPLAY IMAGE.
S1060
MAKE ALBUM DIRECTORY.
S1070
GENERATE ALBUM MANIFEST FILE.
S1080
RECORD THE ALBUM MANIFEST FILE.
S1090
GENERATE INDEX MANIFEST FILE.
S1100
RECORD THE INDEX MANIFEST FILE.
S1110
END

*FIG. 5*

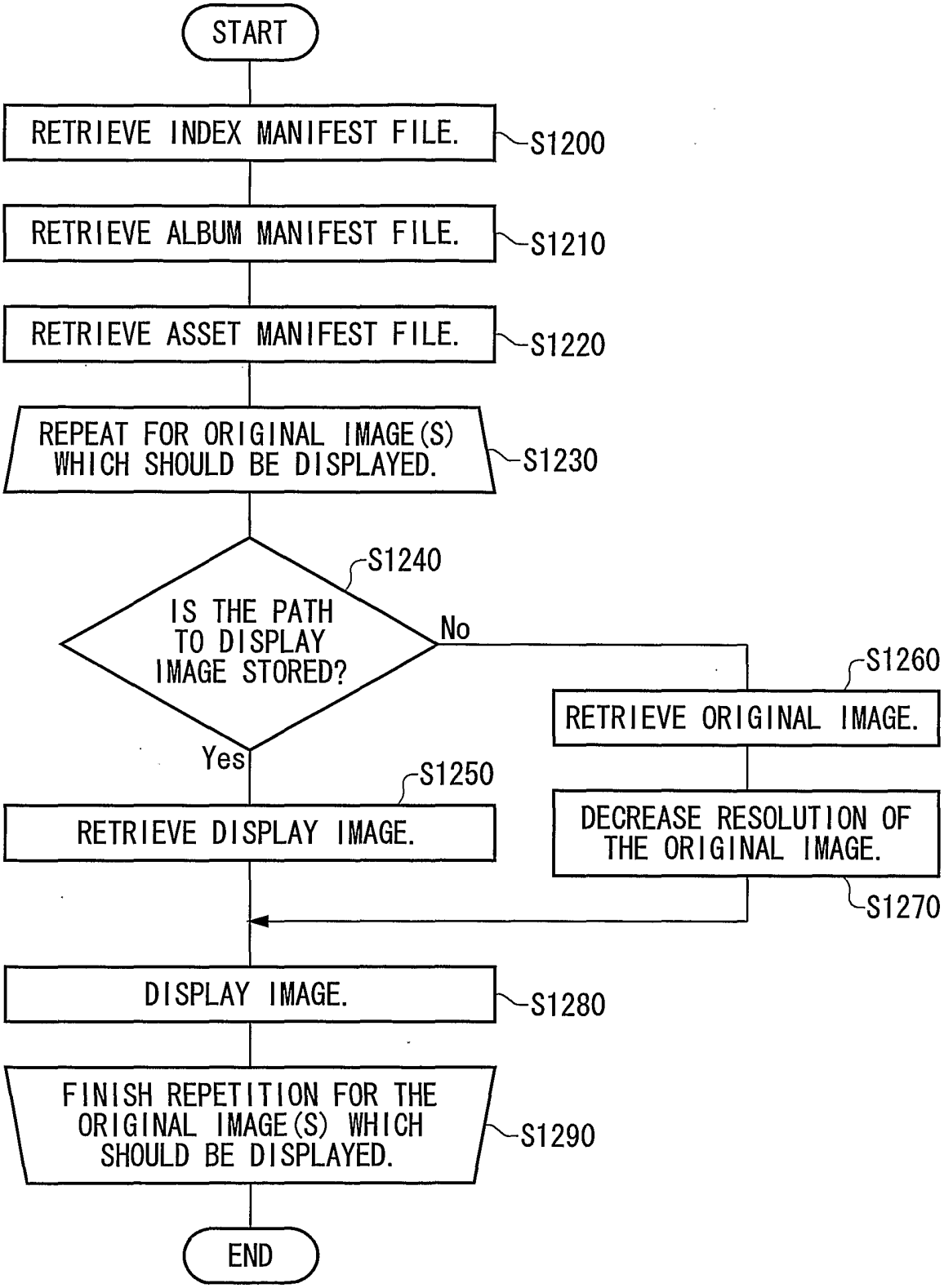

START
RETRIEVE INDEX MANIFEST FILE.
S1200
RETRIEVE ALBUM MANIFEST FILE.
S1210
RETRIEVE ASSET MANIFEST FILE.
S1220
REPEAT FOR ORIGINAL IMAGE(S) WHICH SHOULD BE DISPLAYED.
S1230
S1240
IS THE PATH TO DISPLAY IMAGE STORED?
No
Yes
S1260
RETRIEVE ORIGINAL IMAGE.
S1250
RETRIEVE DISPLAY IMAGE.
DECREASE RESOLUTION OF THE ORIGINAL IMAGE.
S1270
DISPLAY IMAGE.
S1280
FINISH REPETITION FOR THE ORIGINAL IMAGE(S) WHICH SHOULD BE DISPLAYED.
S1290
END

*FIG. 6*

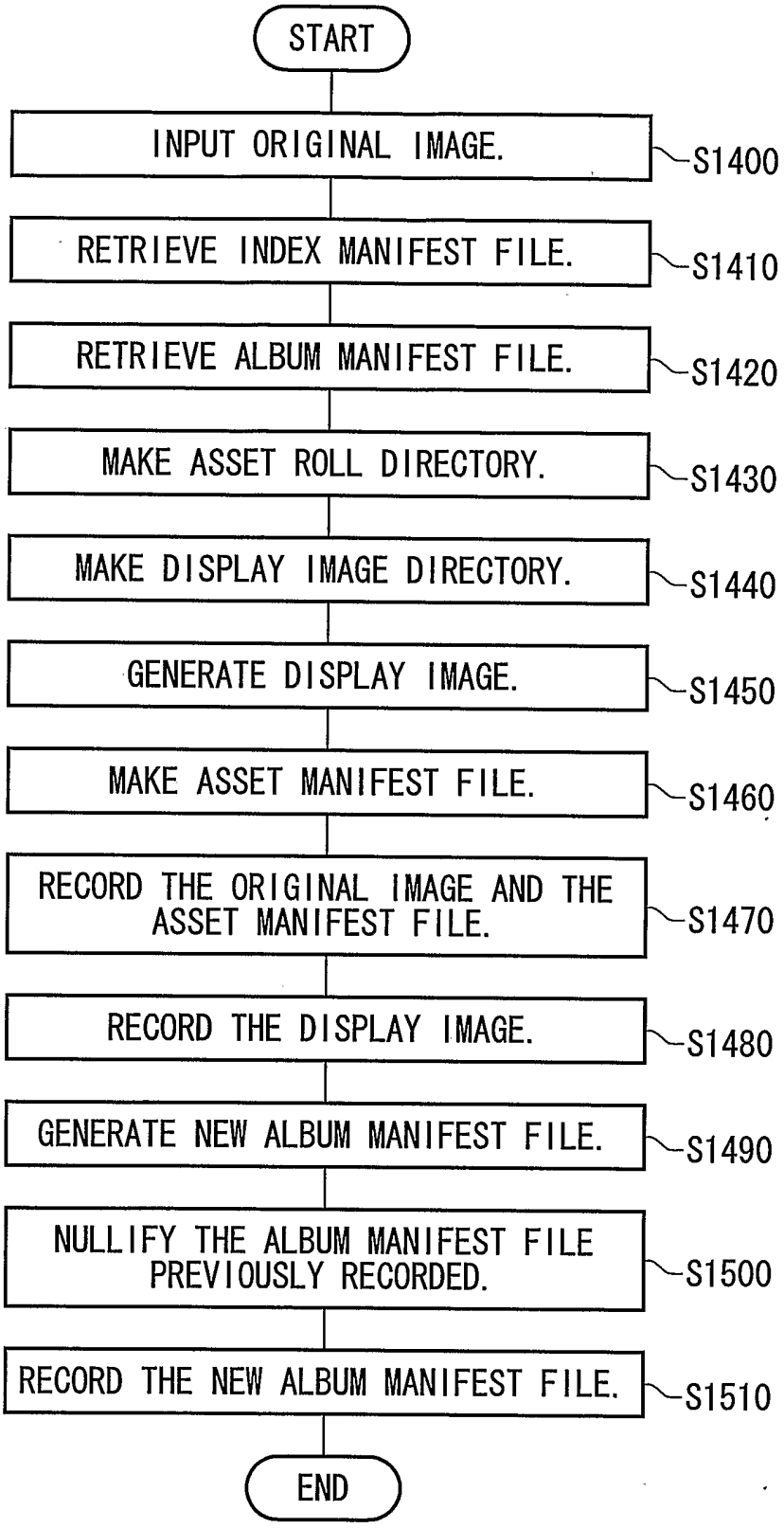

START
INPUT ORIGINAL IMAGE.
S1400
RETRIEVE INDEX MANIFEST FILE.
S1410
RETRIEVE ALBUM MANIFEST FILE.
S1420
MAKE ASSET ROLL DIRECTORY.
S1430
MAKE DISPLAY IMAGE DIRECTORY.
S1440
GENERATE DISPLAY IMAGE.
S1450
MAKE ASSET MANIFEST FILE.
S1460
RECORD THE ORIGINAL IMAGE AND THE ASSET MANIFEST FILE.
S1470
RECORD THE DISPLAY IMAGE.
S1480
GENERATE NEW ALBUM MANIFEST FILE.
S1490
NULLIFY THE ALBUM MANIFEST FILE PREVIOUSLY RECORDED.
S1500
RECORD THE NEW ALBUM MANIFEST FILE.
S1510
END

*FIG. 7*

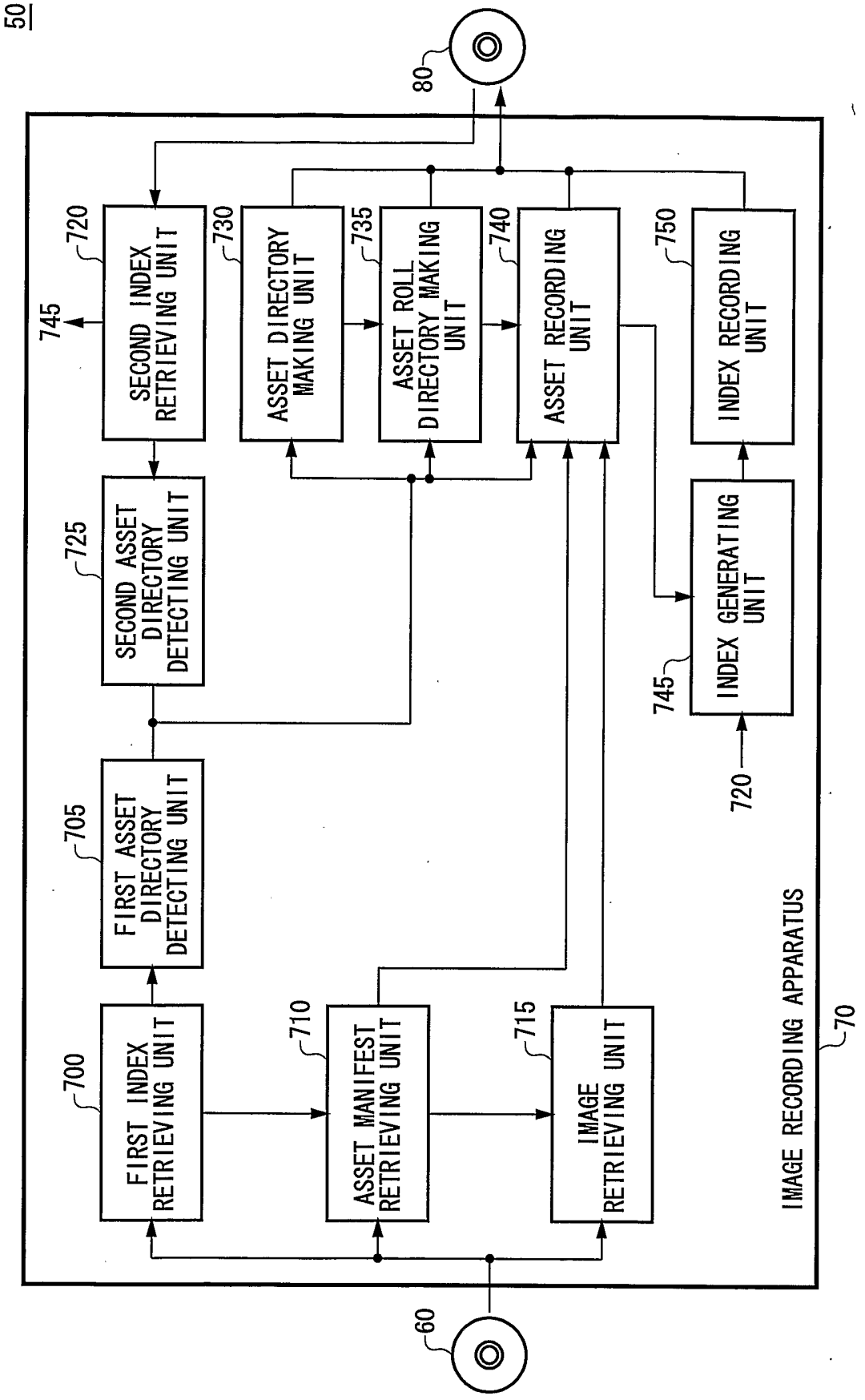

50
80
60
70
IMAGE RECORDING APPARATUS
FIRST INDEX RETRIEVING UNIT
700
FIRST ASSET DIRECTORY DETECTING UNIT
705
ASSET MANIFEST RETRIEVING UNIT
710
IMAGE RETRIEVING UNIT
715
SECOND INDEX RETRIEVING UNIT
720
SECOND ASSET DIRECTORY DETECTING UNIT
725
ASSET DIRECTORY MAKING UNIT
730
ASSET ROLL DIRECTORY MAKING UNIT
735
ASSET RECORDING UNIT
740
INDEX GENERATING UNIT
745
INDEX RECORDING UNIT
750

FIG. 8

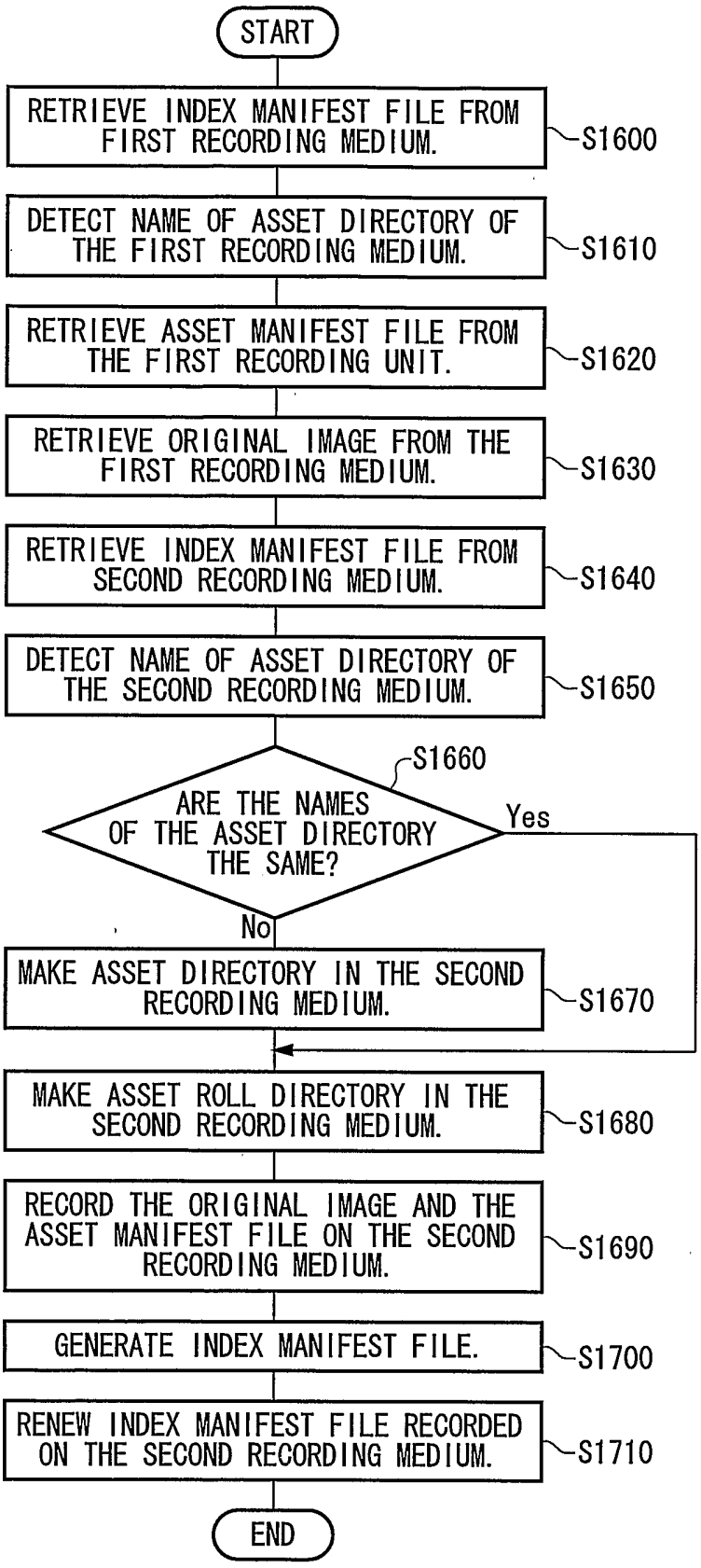

START
RETRIEVE INDEX MANIFEST FILE FROM FIRST RECORDING MEDIUM.
S1600
DETECT NAME OF ASSET DIRECTORY OF THE FIRST RECORDING MEDIUM.
S1610
RETRIEVE ASSET MANIFEST FILE FROM THE FIRST RECORDING UNIT.
S1620
RETRIEVE ORIGINAL IMAGE FROM THE FIRST RECORDING MEDIUM.
S1630
RETRIEVE INDEX MANIFEST FILE FROM SECOND RECORDING MEDIUM.
S1640
DETECT NAME OF ASSET DIRECTORY OF THE SECOND RECORDING MEDIUM.
S1650
S1660
ARE THE NAMES OF THE ASSET DIRECTORY THE SAME?
Yes
No
MAKE ASSET DIRECTORY IN THE SECOND RECORDING MEDIUM.
S1670
MAKE ASSET ROLL DIRECTORY IN THE SECOND RECORDING MEDIUM.
S1680
RECORD THE ORIGINAL IMAGE AND THE ASSET MANIFEST FILE ON THE SECOND RECORDING MEDIUM.
S1690
GENERATE INDEX MANIFEST FILE.
S1700
RENEW INDEX MANIFEST FILE RECORDED ON THE SECOND RECORDING MEDIUM.
S1710
END

*FIG. 9*

# INTERNATIONAL SEARCH REPORT

International application No
PCT/JP2006/303346

A. CLASSIFICATION OF SUBJECT MATTER
INV. G11B27/031

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)
G11B H04N G06F

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

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| X | EP 0 727 906 A (SONY CORPORATION)<br>21 August 1996 (1996-08-21)<br>abstract<br>page 2, line 1 - page 6, line 53<br>page 8, line 15 - line 36<br>page 24, line 7 - page 25, line 19<br>page 27, line 46 - page 30, line 22<br>page 40, line 50 - page 42, line 47<br>figures 1,23,28,29,38 | 1-9 |
| X | EP 1 341 177 A (LG ELECTRONICS INC)<br>3 September 2003 (2003-09-03)<br>abstract<br>the whole document | 1-9 |

-/--

[X] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

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"E" earlier document 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

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"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 | Date of mailing of the international search report |
|---|---|
| 20 June 2006 | 29/06/2006 |

| Name and mailing address of the ISA/ | Authorized officer |
|---|---|
| European Patent Office, P.B. 5818 Patentlaan 2<br>NL - 2280 HV Rijswijk<br>Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,<br>Fax: (+31-70) 340-3016 | Horstmannshoff, J |

# INTERNATIONAL SEARCH REPORT

International application No
PCT/JP2006/303346

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
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International application No
PCT/JP2006/303346

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
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| | | CN 1717031 A | 04-01-2006 |
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| | | KR 2003069638 A | 27-08-2003 |
| | | US 2003161616 A1 | 28-08-2003 |