

(19) (KR)  
(12) (A)

(51) 。 Int. Cl.7  
G06F 17/00  
G06F 17/30

(11)  
(43)

10-2005-0002681  
2005 01 10

(21) 10-2004-0070337 ( )  
(22) 2004 09 03  
(62) 20-2004-7000003  
: 2004 03 19

(30) 60/221,394 2000 07 24 (US)  
60/221,843 2000 07 28 (US)  
60/222,373 2000 07 31 (US)  
60/271,908 2001 02 27 (US)  
60/291,728 2001 05 17 (US)

(71) 94306 4180

(72) 4 8-402

1가 101-308

204-303

2 609-42

5 108-1701

425-1402

(74)

:

(54) 가

(tagging), (indexing), ,

가

(

) ( )

가 ,

1

, , , , ,

1

2

3

4

5

가

6

7 6

okmarks)

(list of multimedia bo

8

가

9

10

11

12

13

14

15

16

17 가

18 ( 18A) 가 ( 18B)

19 , 가

20 19 가 가 2040

21 가

22 19 1 XML

23 19 2 XML

24 19 3 XML

25 22, 23, 24 가 1, 2, 3 XML

26 ID 22, 23, 24 1, 가 2, 3 XML

27 25 26 XML

28 가 가

(marking)

(tag)

(metadata)

1. (Multimedia Bookmark)

가

가

가

가,

(streaming)

가

(browsing)

(bookmark)

marking)

( )  
URI(Uniform Resource Identifier)  
. Microsoft

(ma

, URL URI  
 가 URI 가 가  
 1 (positional information) 112 (title) 114 110 108  
 112 URI (bookmarked position) 106 (byte position) 114  
 가 가 가 가  
 가 (buffering) 가 가 (variation) 가  
 가, (format) MPEG, ASF, RM, MOV 가  
 AVI, MIDI, MP3 WAV 가 (s  
 egment) (c  
 ontent information) 가  
 가 가  
 가 가 가 가  
 가 가 가 가  
 / 가  
 (variation file) 가  
 (bandwidth) , CNN.com : Microsoft ASF (28.8 K  
 bps, 80 Kbps), RealNetworks RM (28.8 Kbps, 80 Kbps), Apple QuickTime (56 Kbps).  
 (mismatch of time point) 가  
 (media time point)  
 가 ( , 28.8 Kbps  
 ) ( , 80 Kbps )  
 가 1 , 1

2. 가 (Virtual Video Editing)

(cut and paste) 가

가 (original input video)

가 (metadata)

가

(streaming) DVD, Video CD

(key frame) (annotation)

(hierarchical structure) (metafile) DBMS(database man

agement system)

가 가

1. \_\_\_\_\_

(segment)가 (intermediate point)

bookmark) (multimedia b

content information) 가 (c

bookmark position) (b

(indexing), (rendering)

URI, (time code) (positional information)

가

가 (feature)

가

(attachment)

가

가

2. 가

(virtual editing)  
URI

가  
CD-ROM, DVD,

(streaming)

가

가

가

(composing segment)

가

URI

(component segment)

URI

URI

URL

URL

URL

URL

가

(virtual video editor)

가

(network controller),

(file controller)

(parser),

(structure manager),

(input buffer)

sing buffer),  
tor)

(compo  
(genera

가

generator),

(playlist

(video player)

가

(display device)

1.

가

(description)

(master file)

( )

가

(tag)

GUID(global unique identifiers)

GUID

GUID

GUID 가 GUID

GUID 가 가 GUID

2 (positional information) 212 (content information) 214

210 212 204 206

214 208

214

212 ( ) URI (

) URI , URL (a

214 20

udio-visual feature) (identifier) (textual feature) (capturing) (sampling)

6 204

210 (elapsed Time) 212 URI, (time code) 214 (color histogram)

(thumbnail) 210 214

( ) 212 URI 214

214

2 URI 214 (byte offset) 21

3 314 ( 2 214 )

322, 326 324 310 320, 328 314 330

가 URI 가 가

가 , 가 가 가 , URI  
 2 214 ) , 310 , 314 ( 3  
 28, 330 322, 314 324, 328  
 (content-based) (text-based)  
 310 URI URL, 가 ,  
 334 336 ,  
 가 334  
 4 322 가  
 4 (node) (tree)  
 feature vector)  $D_f$  (maximum distance) (   
 , 414  $D_f$  414 416 418  
 (color histogram) 가  
 $d(fq, fm) > D_f + e$   $fq$  가 ,  $fq$   
 m  $d(fq, fm)$  L1 nor  
 (pruning) ,  $fm$  ,

---

5 ps 가 , 502 가 (variation) 5 28.8 80kb  
 bps 가 , 가 RM 508 . RM 508 ASF 504 506 80k  
 $o_1$  , ASF 504 506 ASF 504, 506  
 , RM 508  $o_1$  , RM 514  $o_4$  가  
 514  $o_1$  RM 508 514  
 ASF 504 506 가 RM 514  $o_1$  가 514  
 , 28.8kbps RM 510 514  $o_2$  ASF 504 5  
 06 가 MOV 512 가  $o_2$  가 56kbps  
 (slave file) 5 , 80kbps (master file) ASF 504  
 t) 502 가 (offse  
 ference), (byte difference)  $o_1, o_2$   $o_3$  가 (time dif  
 가 , 가 ,  
 $o_1$   $o_3$  ,  $o_2$  가 5 ,  
 0

(bookmarked file)

(playback file)

5

가

(media profile)

URI

(time scale factor)

가

0 1

, 0.5

2

1

2

가

1 5

1

MPEG-7

ISO/IEC MPEG-7

XML Schema

X

ML

512

508, 510, 512

504

$o_1=2, o_2=-3$

가

$o_3=10$

가

가

표 1. 변형에 대한 메타데이터의 예

```

<VariationSet>
  <Source>
    <Video>
      <MediaLocator>
        <MediaUri>http://www.server.com/sample-80.asf</MediaUri>
      </MediaLocator>
    </Video>
  </Source>
  <Variation timeOffset="PT0S" timeScale="1">
    <Source>
      <Video>
        <MediaLocator>
          <MediaUri>http://www.server.com/sample-28.asf</MediaUri>
        </MediaLocator>
      </Video>
    </Source>
    <VariationRelationship>alternativeMediaProfile</VariationRelationship>
  </Variation>
  <Variation timeOffset="PT3S" timeScale="1">
    <Source>
      <Video>
        <MediaLocator>
          <MediaUri>http://www.server.com/sample-80.rm</MediaUri>
        </MediaLocator>
      </Video>
    </Source>
    <VariationRelationship>alternativeMediaProfile</VariationRelationship>
  </Variation>
  <Variation timeOffset="-PT2S" timeScale="1">
    <Source>
      <Video>
        <MediaLocator>
          <MediaUri>http://www.server.com/sample-28.rm</MediaUri>
        </MediaLocator>
      </Video>
    </Source>
    <VariationRelationship>alternativeMediaProfile</VariationRelationship>
  </Variation>
  <Variation timeOffset="PT10S" timeScale="0.5">
    <Source>
      <Video>
        <MediaLocator>
          <MediaUri>http://www.server.com/sample-56.mov</MediaUri>
        </MediaLocator>
      </Video>
    </Source>
    <VariationRelationship>alternativeMediaProfile</VariationRelationship>
    <VariationRelationship>temporalReduction</VariationRelationship>
  </Variation>
</VariationSet>

```

6 가 , 가 602 가  
 , 가 , 가 604 . 6  
 , U URI, O 6 , URI,  
 2 610 ,  
 612 . 612 610 URI  
 가 (list of variations) 가  
 , , 가  
 ,  
 URI  
 (ID)  
 ID URI,  
 ID 가 가 .

7 6 (list of multimedia boo  
 kmarks) 606  
 704 706, 702 6 708  
 630 ID, 'Metadata1'  
 634 636 702  
 ID, 'Metadata2' 710 712가 URI,  
 BP , CI , BP CI U URI,  
 가 , 7 ID URI,  
 가 ,  
 가

(adjusted bookmarked position)  $P_b$   $O_b$   $O_p$   
 $S_b$   $S_p$

$s = s_p / s_b$   $P_p$  (time scale rati  
 o)가

$$P_p = s \times P_b \text{ if } O_p = s \times O_b$$

$$P_p = s \times P_b + (|O_p| + |s \times O_b|) \text{ if } O_p > 0 > s \times O_b$$

$$P_p = s \times P_b + (|O_p - s \times O_b|) \text{ if } O_p > s \times O_b \text{ or } 0 < O_p < s \times O_b$$

$$P_p = s \times P_b - (|O_p| + |s \times O_b|) \text{ if } O_p < 0 < s \times O_b$$

$$P_p = s \times P_b - (|O_p - s \times O_b|) \text{ if } 0 < O_p < s \times O_b \text{ or } O_p < s \times O_b < 0$$

8 가 802, 80  
 4, 806, 808, 810 8  
 가 1,  $s = 1$

(durable multimedia bookmark syst

em) 6 7 가 6  
 610 7 706 가  
 606 706 6 606  
 ID 'Metadata1' 6 가 706 602  
 602 608 602 612  
 706 BP2  
 612 URI

5 502

(referential segment) 5 A 514







1520 (retrieved segment) /  
 가 1530, 1532, 1534 1522  
 1524 가 1526  
 1528 (retrieved position) 1530  
 가 1532  
 1504 1534 가 16 1610  
 가 가 가 2 가  
 가 가 가

표 2. 검색 유형별 이용 가능한 북마크 정보

| 검색<br>유형 | 이용 가능한 북마크 정보 |       |        |
|----------|---------------|-------|--------|
|          | 캡춰된 이미지       | 위치 정보 | 텍스트 주석 |
| A        | √             |       |        |
| B        |               | √     |        |
| C        |               |       | √      |
| D        | √             | √     |        |
| E        | √             |       | √      |
| F        |               | √     | √      |
| G        | √             | √     | √      |

가. A:

가

B:

가 가 URI ) (

C:

가

D:

A B

E:

가

F:

가

G:

가 가 가

E F

16

URI, 16 1048 1602  
1604 가 ID,  
1608  
1610

10 1046

1606

(bookmarked information)

URI

( )

( )

ID

(opener page) URI

( , )

( , , , )

가 (streaming)

가

가 (default title)

가

가

가

가

가

가

가 가

가

(watermarking)

URI

가

HTML : HTML

HTML HTML

HTML

가

L (test string)

가 (binary file) Base-16 Base-64 .HTM

HTML (inline media)

HTML 가

, HTML

HTML

HTML

3

HTML

표 3. 북마크 정보를 나타내는 HTML 문서의 예

```

<Html>
  <Body>
    <Object id="IMDisplay" codebase=http://ww.server.com/BookmarkViewer
      classid=CLSID:FFD1F137-722C-46B7VIEWASTEXT>
      <Param name="BookmarkedFile" value="mms://www.server.com/sample.meg">
      <Param name="BookmarkedPosition" value="435.7870549999995">
      <Param name="OpenerURL" value="http://www.server.com/sample.html">
      <Param name="BookmarkTitle" value="Sample Title">
      <Param name="BookmarkDate" value="July 24">
      <!-- Inline media: character coded binary image -->
      <Param name="CapturedImage"
value="/9j/4AAqskAJRgABAQAAAQABAAD2wBDAAMCAgMCAfMDAwMEAwMEBQGFBQQEB
QoJBwUODApMDAsKCwsMDhIQDO4RDgsLEBYQERMWFRWVDA8XGBUIGBIRFRT/weBDAQ
MEGAUEBQkFBQkUDQsNFBQUFBQUGBQUFBQUFxFxXlueakJ9+7DbsbICEI.waAvfIP3htpVE9yHt
Y12pawxwoI0MqyFUWhCrheoUYAAB8AYGD41RR&Fdyrva59E6f/
0F4sHV7bXNGvDp2twwJb20zb20vGsk8JUkEapENKuugKsSD56eW2fkEx/GfxZ9WfEexpW29SarJqp
HkIoNgH4o1aGNifZAUMB+VeAk4xK59OooVL1-uFz/2Q==">
    </Object>
  </Body>
</Html>

```

17 가  
 1704 , 1702 , 1708  
 가  
 1706 , 1710 가  
 1706  
 , 1712 9  
 1714  
 가  
 가 1716  
 가 1718 가  
 , 12 1032  
 가 가

(attachment attached file)  
 가  
 (option flag) 가 가  
 :  
 (enclose)' (attach)'

가

2. 가

CD-ROM, DVD,  
 WAN(wide area network) LAN(local area network) (streaming)  
 (browsing),



0 . 20 19 가 가 2008 가 204

20 19 가 가 5 (2014) 2042 2044 가 . 204

c (2020) 2046 , 2040 A (2026) C (2032)

2048 2050 20 가 , 가 , 가

(copy) , 가 가 가 , . ,

ID , URI URL URI 가 URL

가 가 , , 가 가 가 가

가 가 가 가 가 가 가 가

URL URL URL URL URL URL

(child node) URL URL URL URL

URL URL URL (play list)

21 가 가 가 DBMS 가 가 DBMS

21 가 가 가 가 (database object) 가 DBMS

가 가 가 21 (key)

21 가 2102 2104

2106 (composing buffer)

2108 가 No 2110 2110

2106 Yes ( 2106 No )

2104 2112 2104 URI

2116 2110 가 ( ) 2104

( 2114 2110 )

2118 2118 URL 2114 2116

de) URL . 2120 URL URL (sibling no

4 , 2122 URL URL 212

가 , 2104 가 가 2126 2102

가 가 가

22, 23, 24, 25, 26 가 19 19

(domain name) www.video.server1 2 3

www.video.server2 가

22 19 1 (2340) 2302 XML(extensible markup language)

1 1 URL

가 가

3 (2360) (2306) 23 ID가 19 2 (2350) (2304)

XML

25 26 22, 23, 24 1, 2, 3 가

( 19 2308) XML 가 www.video.se

rver2 가 가 21 가 25 26

URI 26 URI ID URL ID

URI ID URL id() XML XLink XPointer ID가 가

가 (play list) URI (virtual video player)가 27 25 26 (root segment)

) XML (virtual video editor) (block diagram)

28 가 가 2808, 2810, 2814

28 가 28 1 (2808)

가 2804 2806 3 (2814)

2804 2806

controller) 2822 (network controller) 2820 2802 (file 2820)

2822

XML (XML parser) 2824 XML XML

(input buffer) 2826

(structure manager) 2828가 가

2838 2840

(composing buffer) 2830 2

828

23 가 2 c ( 19 1920 ) 가

가 2 URL www.video.server1/video2 23 2

c URI www.cideo.server1/metafile2.xml#id(seg\_c) 23 2

'seg\_c'

<Segment id=' seg\_c ' title='segment c' duration='150'>

<StartTime> 230 </StartTime> <MediaDuration> 150 </MediaDuration>

<Keyframe> ... </Keyframe> <Annotation> ... </Annotation>

...

</Segment>

21 , 가 .  
'seg\_c' . ( 25 .)

<Segment id=' seg\_c ' title='segment c' duration='150'>

<MediaURI> //www.video.server1/video2 </MediaURI>

<StartTime> 230 </StartTime> <MediaDuration> 150 </MediaDuration>

<Keyframe> ... </Keyframe> <Annotation> ... </Annotation>

...

</Segment>

, 'seg\_c' URI . ( 26 .)

<Segment xlink:form='simple' show='embed'

href=' //www.video.server1/metafile2.xml#id(seg\_c) '>

<MediaURI> //www.video.server1/video2 </MediaURI>

</Segment>

가 URL . ,

(play list generator) 2836  
가 가 .  
URL , 27  
2838 .  
(display device) 2840  
XML (XML generator) 2834 2842 .

가 .

가 .

1.

(multimedia bookmark) ,

content information)

(positional information)

(c

2.

가

(variation)

(multimedia bookmark)

set)

(off

가

가

3.

1

2

(content information)

가

4.

3

가

(key video frame)

(video frame)

5.

1

2

(positional information)

가

(time code)

(byte offset)

6.

5 ,  
(elapsed time) (byte length)

7.  
1 2 ,  
(character string)

8.  
1 2 ,  
(local storage)

9.  
1 2 ,  
가

10.  
1 2 ,

11.  
1 2 ,  
가

12.  
2 ,  
(metadata) (media profile)

13.  
2 ,

(referential segment)

14. 1 2 , ,

15.

1 , 2 , 3 , ( ) , 4 , 5 , 6 , 7

(add-bookmark)

16.

(feature) 1 , (query) 2 , 가 3 , 4

17.

16 ,

2 3 ,

16 18.

2 3 ,

가 가

16 19.

2 3 ,

16 20.

4

5 ,

6 ,

4

7

21.

가

1 ,

가 ,

2 ,

가 ,

3

22.

가

가

(virtual video editing)

가

1 ,

2 ,

3 ,

4

가

22 23.

2

22 24.

2

ID

22 25.

XML

22 26.

22 27.

22 28.

가

1

2

(composing segment)

3

(component segment)

4 ,

URI

5 ,

2

4

6 ,

URI

2

URI

4

7 ,

URL

8 ,

8

URL

9 ,

URL

10 URL

, URL

,

**29.**

28

,

가

,

2

**30.**

28

,

가

,

1

**31.**

15

30

**32.**

URL,

가

(virtual video editor)

,

'가'

'가'

'가'

(network controller),

(file controller),

가

(parser),

가

(input buffer),

가

(structure manager),

(composing buffer),

(genera

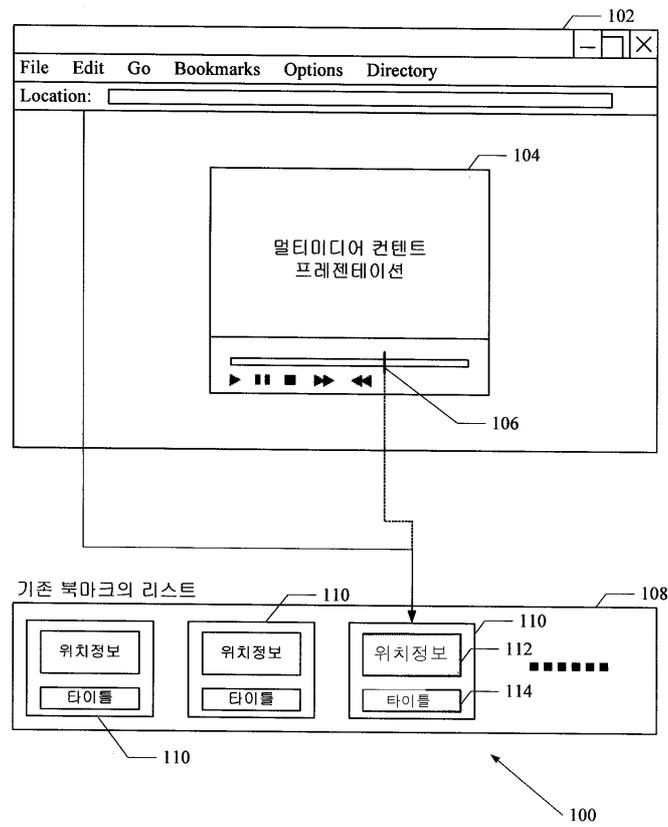
tor),

가  
(play list generator),

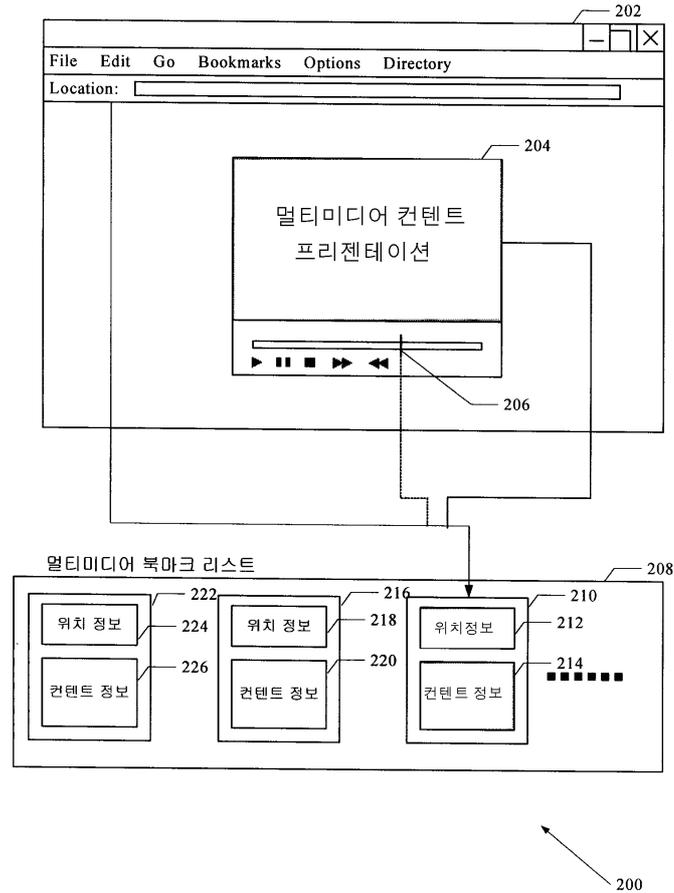
가  
(video player)

가

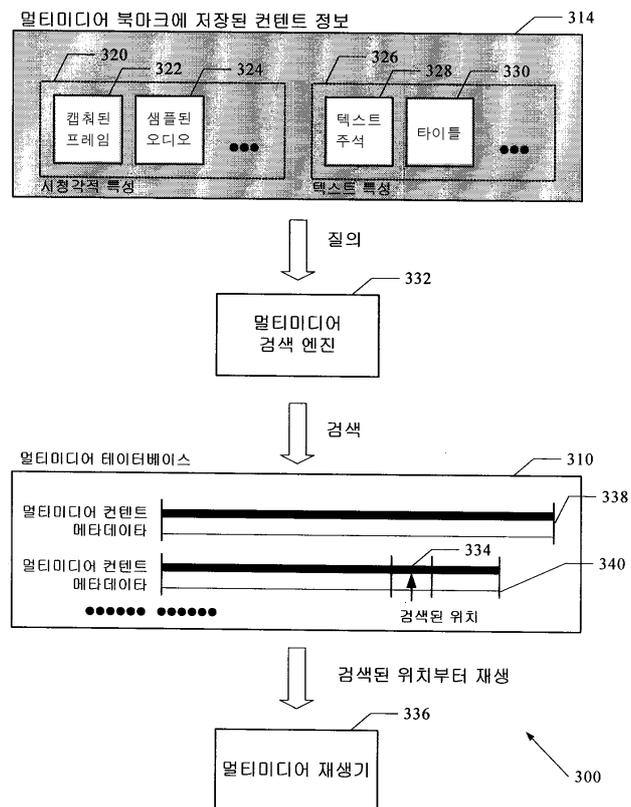
1



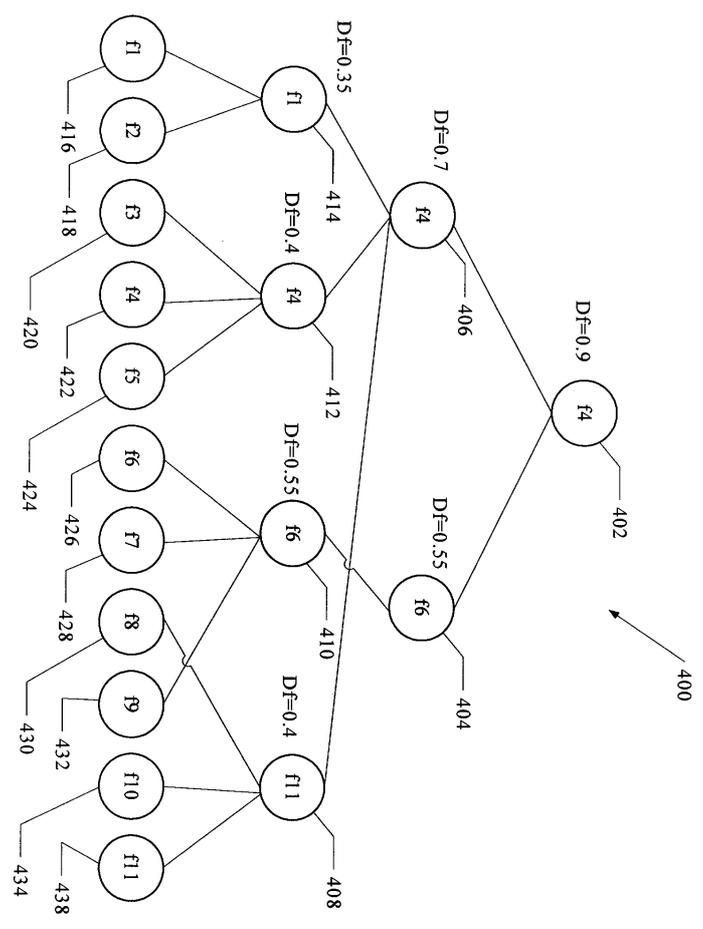
2



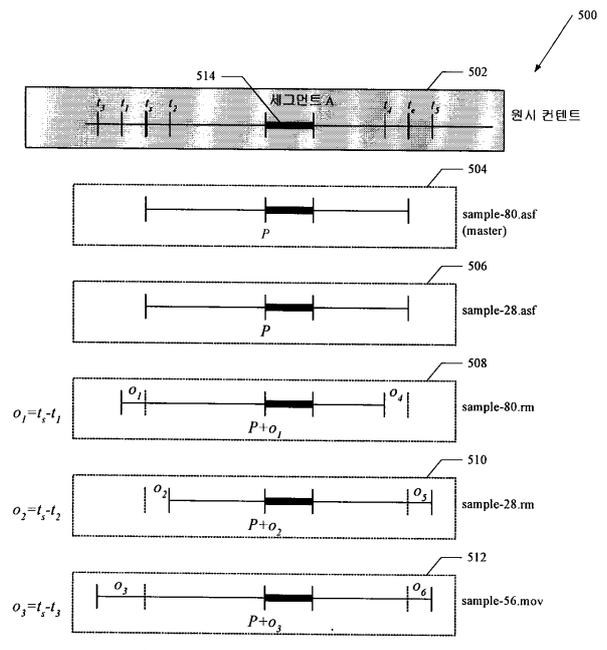
3



4

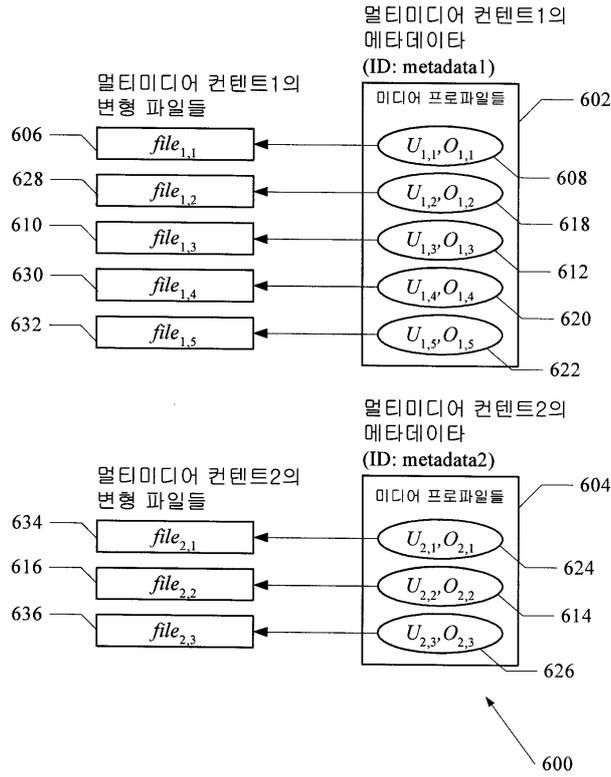


5

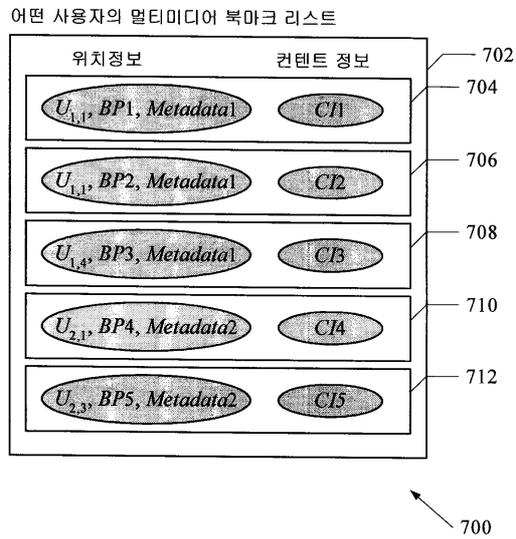


\* The media time point P is a start time of the segment A in the master file.

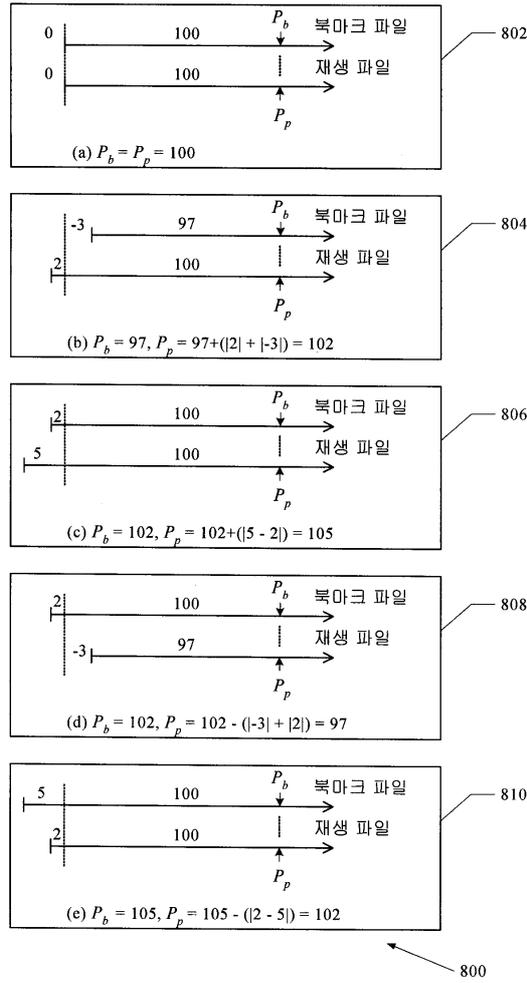
6



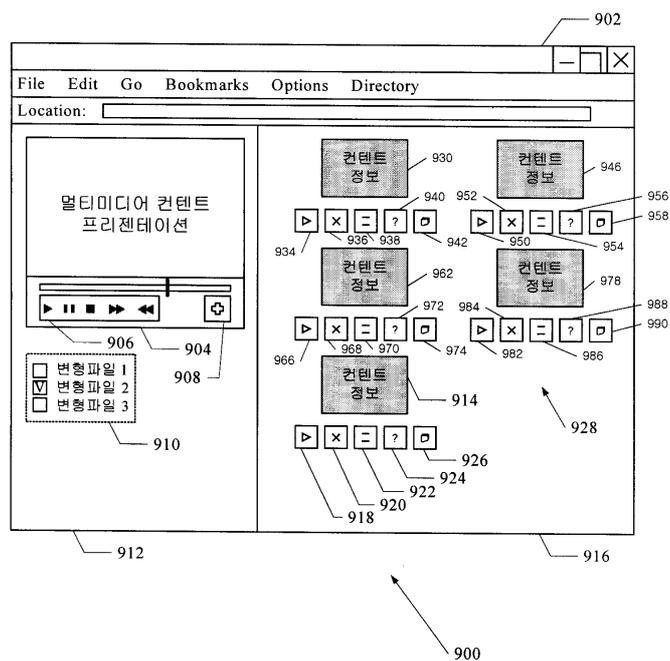
7



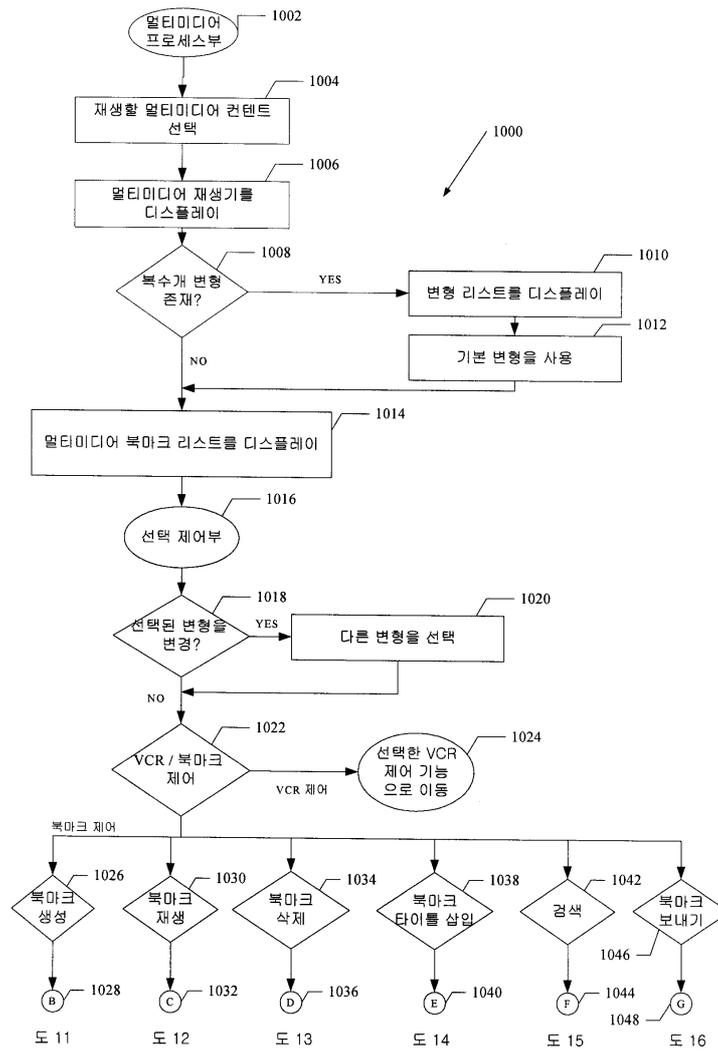
8

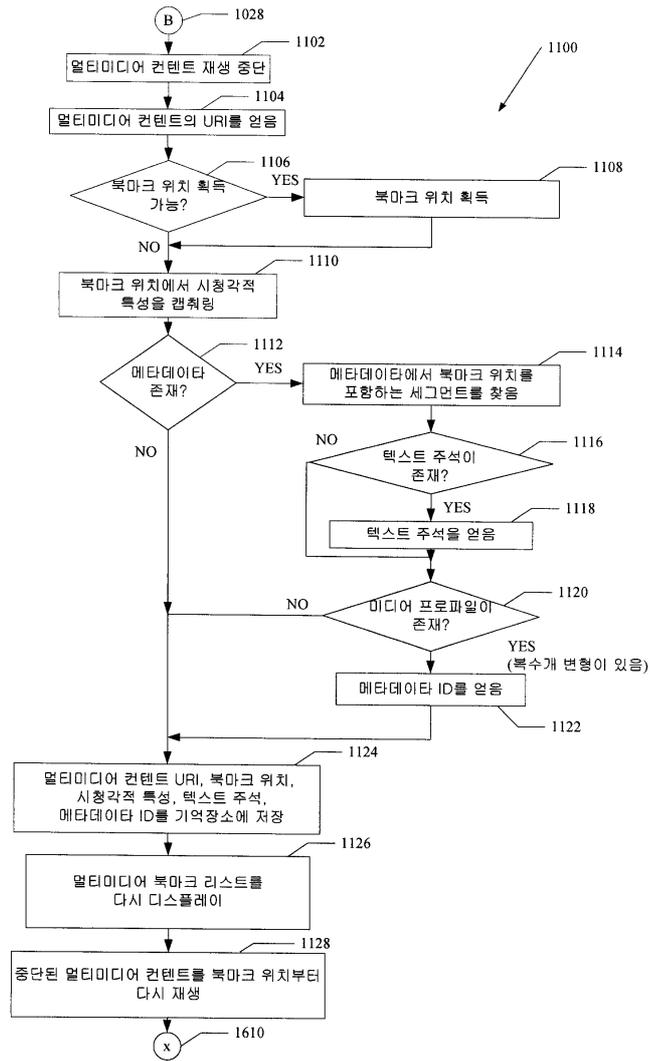


9

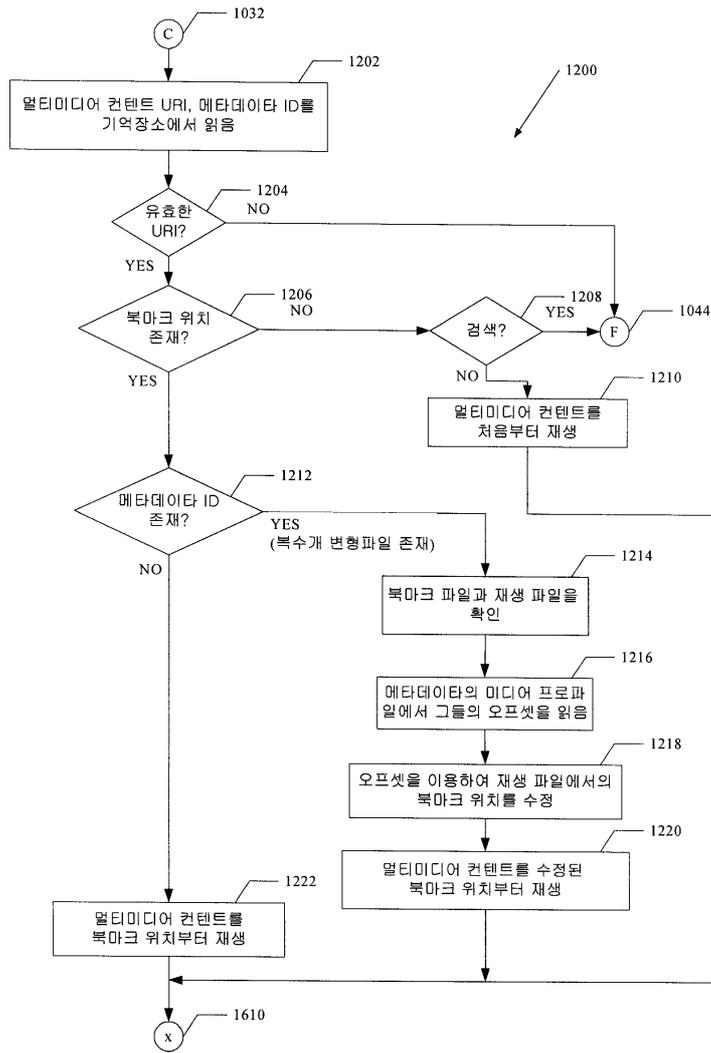


10

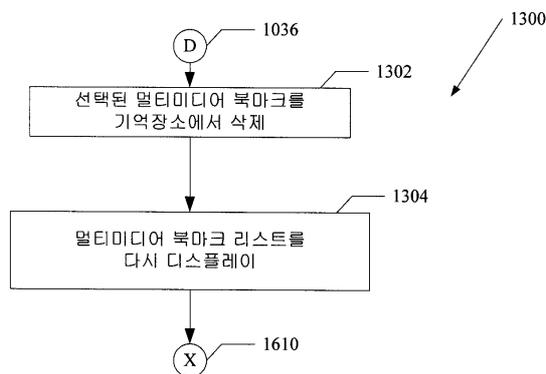




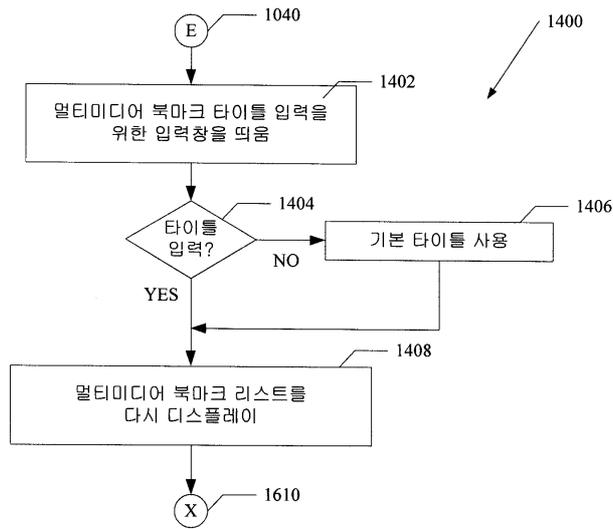
12



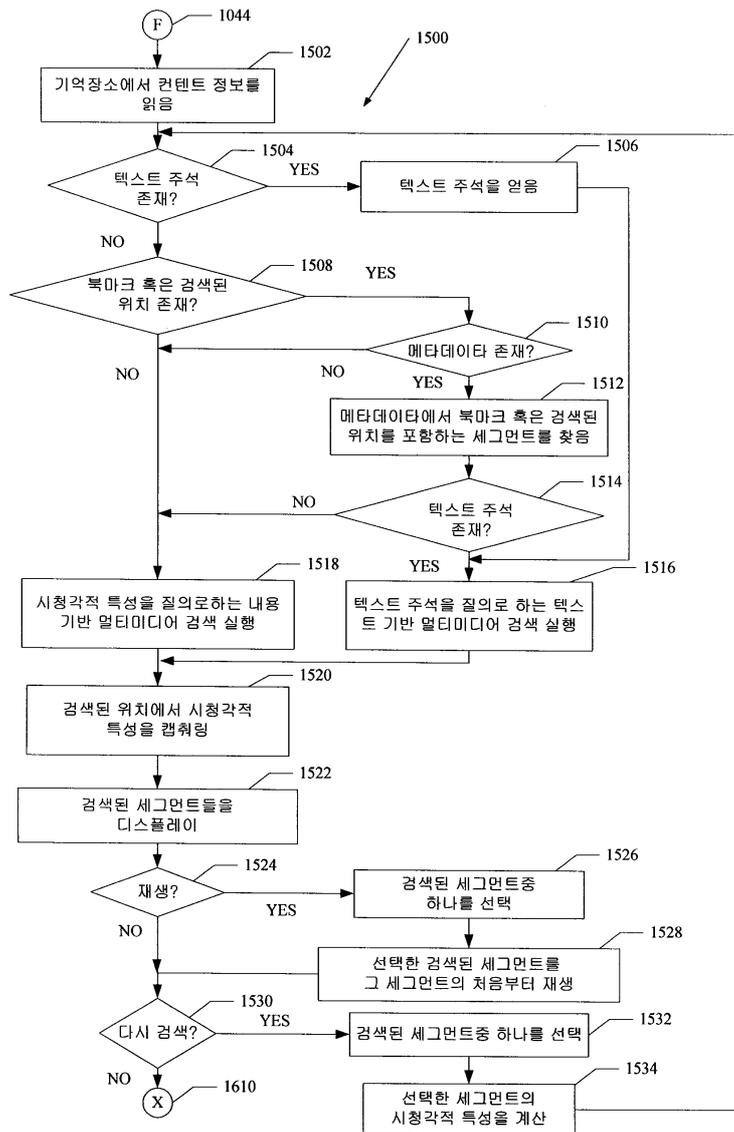
13



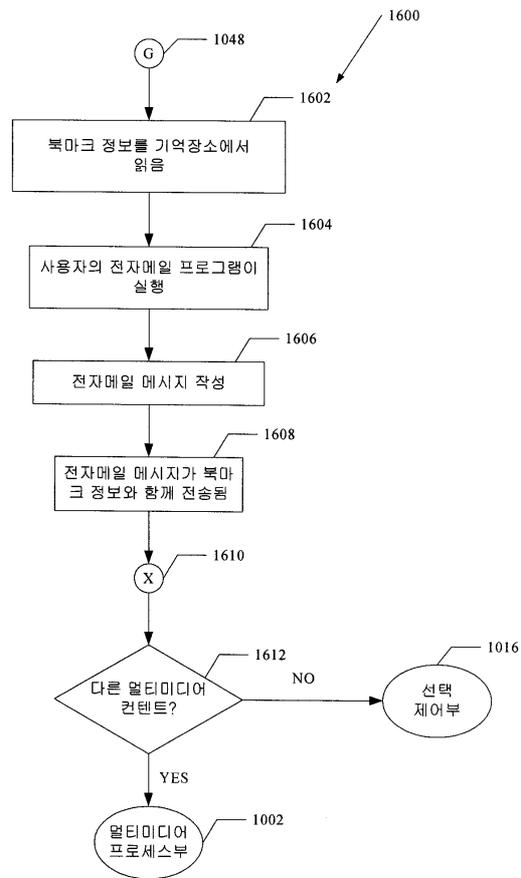
14



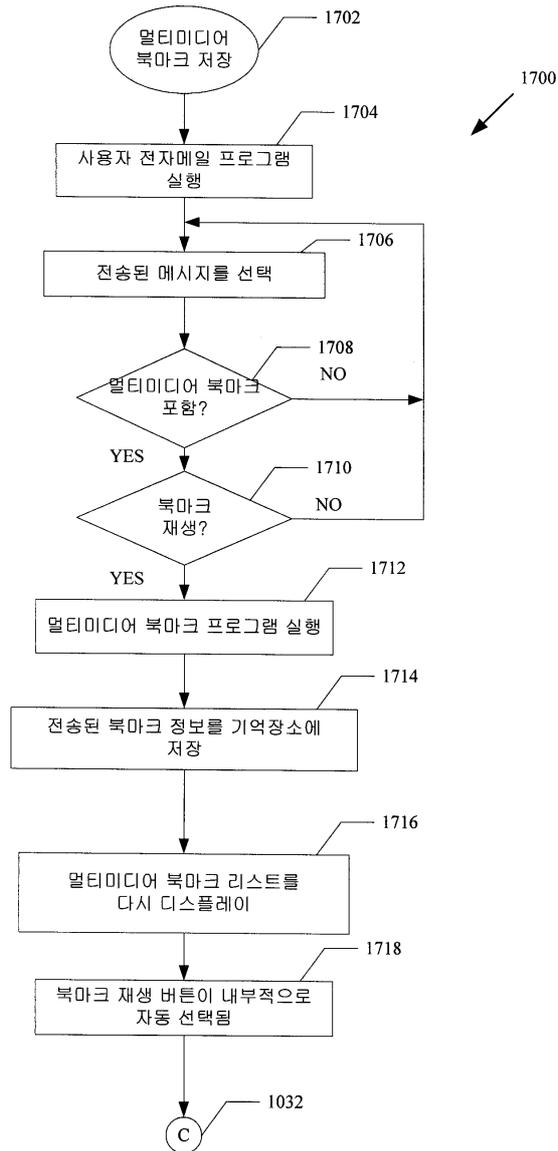
15



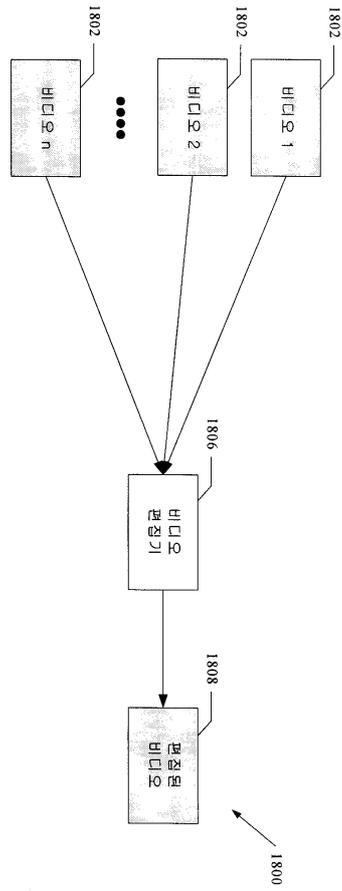
16



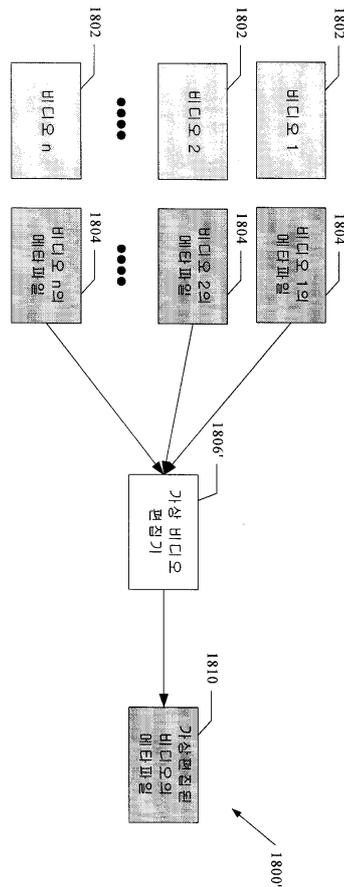
17



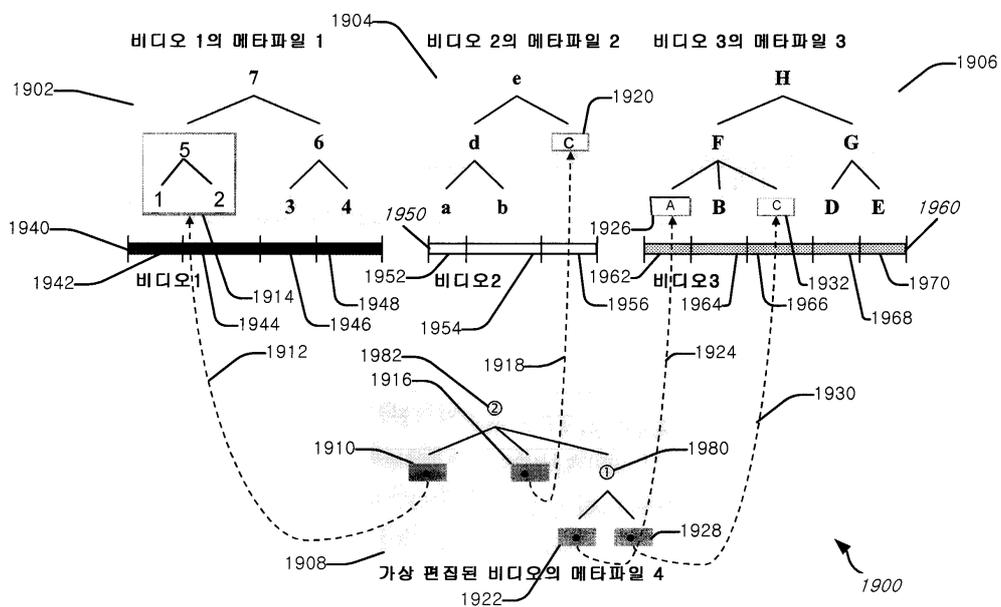
18a



18b

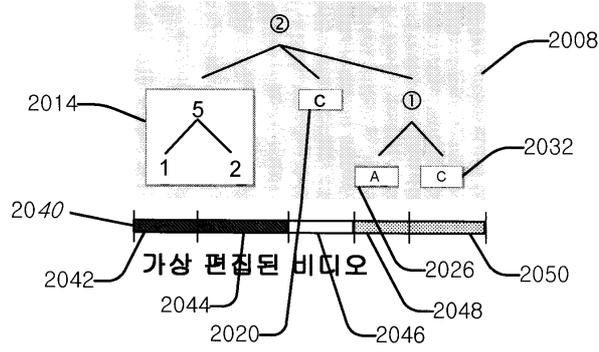


19

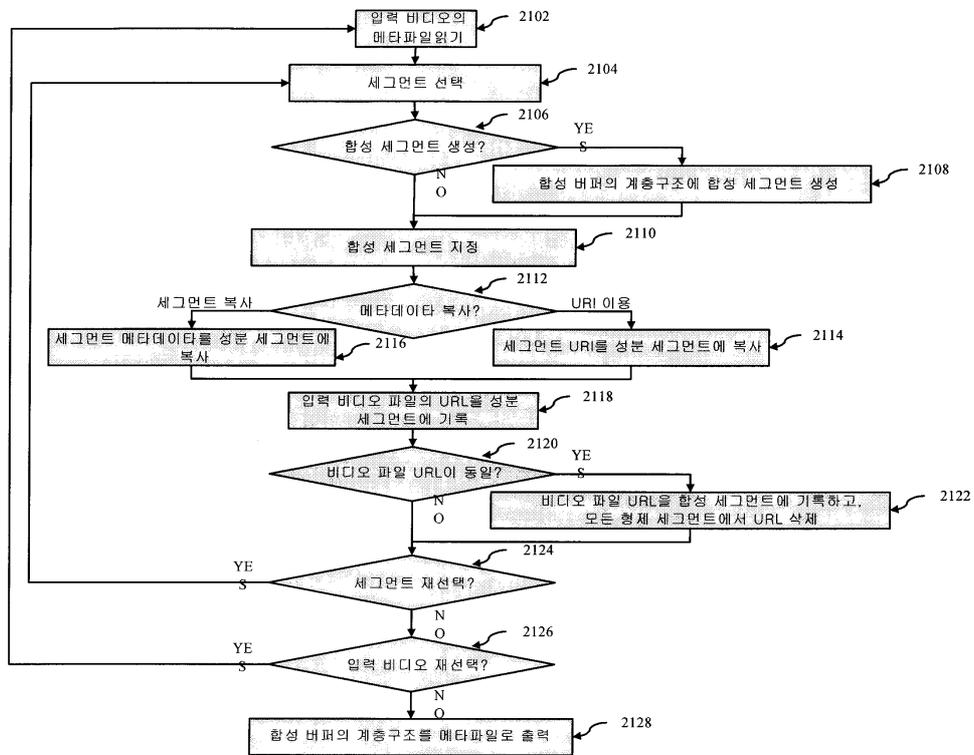


20

가상 편집된 비디오의 메타파일 4



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## 22

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<!-- 서버 1에 저장된 비디오 1의 메타파일 metafile1.xml -->
<Metadata>
  <Segment id="seg_7" title="segment 7" duration="580">
    <MediaURI> //www.video_server1/video1 </MediaURI>
    <StartTime> 0 </StartTime> <MediaDuration> 580 </MediaDuration>
    <Keyframe> . . . . </Keyframe> <Annotation> . . . . </Annotation>
    . . . .
  </Segment>
  <Segment id="seg_5" title="segment 5" duration="300">
    <StartTime> 0 </StartTime> <MediaDuration> 300 </MediaDuration>
    <Keyframe> . . . . </Keyframe> <Annotation> . . . . </Annotation>
    . . . .
  </Segment>
  <Segment id="seg_1" title="segment 1" duration="100">
    <StartTime> 0 </StartTime> <MediaDuration> 100 </MediaDuration>
    <Keyframe> . . . . </Keyframe> <Annotation> . . . . </Annotation>
    . . . .
  </Segment>
  <Segment id="seg_2" title="segment 2" duration="200">
    <StartTime> 100 </StartTime> <MediaDuration> 200 </MediaDuration>
    <Keyframe> . . . . </Keyframe> <Annotation> . . . . </Annotation>
    . . . .
  </Segment>
</Segment>
  <Segment id="seg_6" title="segment 6" duration="280">
    <StartTime> 300 </StartTime> <MediaDuration> 280 </MediaDuration>
    <Keyframe> . . . . </Keyframe> <Annotation> . . . . </Annotation>
    . . . .
  </Segment>
  <Segment id="seg_3" title="segment 3" duration="110">
    <StartTime> 300 </StartTime> <MediaDuration> 110 </MediaDuration>
    <Keyframe> . . . . </Keyframe> <Annotation> . . . . </Annotation>
    . . . .
  </Segment>
  <Segment id="seg_4" title="segment 4" duration="170">
    <StartTime> 410 </StartTime> <MediaDuration> 170 </MediaDuration>
    <Keyframe> . . . . </Keyframe> <Annotation> . . . . </Annotation>
    . . . .
  </Segment>
</Segment>
</Segment>
</Metadata>

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<!-- 서버 1에 저장된 비디오 2의 메타파일 metafile2.xml -->
<Metadata>
  <Segment id="seg_e" title="segment e" duration="380">
    <MediaURI> //www.video_server1/video2 </MediaURI>
    <StartTime> 0 </StartTime> <MediaDuration> 380 </MediaDuration>
    <Keyframe> . . . . </Keyframe> <Annotation> . . . . </Annotation>
    . . . .
  </Segment>
  <Segment id="seg_d" title="segment d" duration="230">
    <StartTime> 0 </StartTime> <MediaDuration> 230 </MediaDuration>
    <Keyframe> . . . . </Keyframe> <Annotation> . . . . </Annotation>
    . . . .
  </Segment>
  <Segment id="seg_a" title="segment a" duration="50">
    <StartTime> 0 </StartTime> <MediaDuration> 50 </MediaDuration>
    <Keyframe> . . . . </Keyframe> <Annotation> . . . . </Annotation>
    . . . .
  </Segment>
  <Segment id="seg_b" title="segment b" duration="180">
    <StartTime> 50 </StartTime> <MediaDuration> 180 </MediaDuration>
    <Keyframe> . . . . </Keyframe> <Annotation> . . . . </Annotation>
    . . . .
  </Segment>
</Segment>
  <Segment id="seg_c" title="segment c" duration="150">
    <StartTime> 230 </StartTime> <MediaDuration> 150 </MediaDuration>
    <Keyframe> . . . . </Keyframe> <Annotation> . . . . </Annotation>
    . . . .
  </Segment>
</Segment>
</Metadata>

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<!-- 서버 2에 저장된 비디오 3의 메타파일 metafile3.xml. -->
<Metadata>
  <Segment id="seg_H" title="segment H" duration="620">
    <MediaURI> //www.video.server2/video3 </MediaURI>
    <StartTime> 0 </StartTime> <MediaDuration> 620 </MediaDuration>
    <Keyframe> . . . . </Keyframe> <Annotation> . . . . </Annotation>
    . . . .
  </Segment>
  <Segment id="seg_F" title="segment F" duration="410">
    <StartTime> 0 </StartTime> <MediaDuration> 410 </MediaDuration>
    <Keyframe> . . . . </Keyframe> <Annotation> . . . . </Annotation>
    . . . .
  <Segment id="seg_A" title="segment A" duration="80">
    <StartTime> 0 </StartTime> <MediaDuration> 80 </MediaDuration>
    <Keyframe> . . . . </Keyframe> <Annotation> . . . . </Annotation>
    . . . .
  </Segment>
  <Segment id="seg_B" title="segment B" duration="150">
    <StartTime> 80 </StartTime> <MediaDuration> 150 </MediaDuration>
    <Keyframe> . . . . </Keyframe> <Annotation> . . . . </Annotation>
    . . . .
  </Segment>
  <Segment id="seg_C" title="segment C" duration="180">
    <StartTime> 230 </StartTime> <MediaDuration> 180 </MediaDuration>
    <Keyframe> . . . . </Keyframe> <Annotation> . . . . </Annotation>
    . . . .
  </Segment>
</Segment>
  <Segment id="seg_G" title="segment G" duration="210">
    <StartTime> 410 </StartTime> <MediaDuration> 210 </MediaDuration>
    <Keyframe> . . . . </Keyframe> <Annotation> . . . . </Annotation>
    . . . .
  <Segment id="seg_D" title="segment D" duration="110">
    <StartTime> 410 </StartTime> <MediaDuration> 110 </MediaDuration>
    <Keyframe> . . . . </Keyframe> <Annotation> . . . . </Annotation>
    . . . .
  </Segment>
  <Segment id="seg_E" title="segment E" duration="100">
    <StartTime> 520 </StartTime> <MediaDuration> 100 </MediaDuration>
    <Keyframe> . . . . </Keyframe> <Annotation> . . . . </Annotation>
    . . . .
  </Segment>
</Segment>
</Segment>
</Metadata>

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## 25

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<!-- 세그먼트 메타데이터를 복사하는 방식에 따라 가상 편집된 비디오의 메타파일
metafile4.xml -->
<Metadata>
  <Segment id="seg_㉔" title="segment ㉔" duration="710">
    <Keyframe> . . . . . </Keyframe> <Annotation> . . . . . </Annotation>
    . . . . .

    <Segment id="seg_5" title="segment 5" duration="300">
      <MediaURI> //www.video.server1/video1 </MediaURI>
      <StartTime> 0 </StartTime> <MediaDuration> 300 </MediaDuration>
      <Keyframe> . . . . . </Keyframe> <Annotation> . . . . . </Annotation>
      . . . . .
    <Segment id="seg_1" title="segment 1" duration="100">
      <StartTime> 0 </StartTime> <MediaDuration> 100 </MediaDuration>
      <Keyframe> . . . . . </Keyframe> <Annotation> . . . . . </Annotation>
      . . . . .
    </Segment>
  <Segment id="seg_2" title="segment 2" duration="200">
    <StartTime> 100 </StartTime> <MediaDuration> 200 </MediaDuration>
    <Keyframe> . . . . . </Keyframe> <Annotation> . . . . . </Annotation>
    . . . . .
  </Segment>
</Segment>

  <Segment id="seg_c" title="segment c" duration="150">
    <MediaURI> //www.video.server1/video2 </MediaURI>
    <StartTime> 230 </StartTime> <MediaDuration> 150 </MediaDuration>
    <Keyframe> . . . . . </Keyframe> <Annotation> . . . . . </Annotation>
    . . . . .
  </Segment>

  <Segment id="seg_㉑" title="segment ㉑" duration="260">
    <MediaURI> //www.video.server2/video3 </MediaURI>
    <Keyframe> . . . . . </Keyframe> <Annotation> . . . . . </Annotation>
    . . . . .
    <Segment id="seg_A" title="segment A" duration="80">
      <StartTime> 0 </StartTime> <MediaDuration> 80 </MediaDuration>
      <Keyframe> . . . . . </Keyframe> <Annotation> . . . . . </Annotation>
      . . . . .
    </Segment>
    <Segment id="seg_C" title="segment C" duration="180">
      <StartTime> 230 </StartTime> <MediaDuration> 180 </MediaDuration>
      <Keyframe> . . . . . </Keyframe> <Annotation> . . . . . </Annotation>
      . . . . .
    </Segment>
  </Segment>
</Segment>
</Metadata>

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<!-- 세그먼트 URI를 복사하는 방식에 따라 가상편집된 비디오의 메타파일 metafile4.xml -->
<Metadata>
  <Segment id="seg_㉔" title="segment ㉔" duration="710">
    <Keyframe> . . . . . </Keyframe> <Annotation> . . . . . </Annotation>
    . . . . .

    <Segment xlink:form="simple" show="embed"
      href="//www.video.server1/metafile1.xml#id(seg_5)">
      <MediaURI> //www.video.server1/video1 </MediaURI>
    </Segment>

    <Segment xlink:form="simple" show="embed"
      href="//www.video.server1/metafile2.xml#id(seg_c)">
      <MediaURI> //www.video.server1/video2 </MediaURI>
    </Segment>

  <Segment id="seg_㉑" title="segment ㉑" duration="260">
    <MediaURI> //www.video.server2/video3 </MediaURI>
    <Keyframe> . . . . . </Keyframe> <Annotation> . . . . . </Annotation>
    . . . . .
    <Segment xlink:form="simple" show="embed"
      href="//www.video.server2/metafile3.xml#id(seg_A)">
    </Segment>
    <Segment xlink:form="simple" show="embed"
      href="//www.video.server2/metafile3.xml#id(seg_C)">
    </Segment>
  </Segment>
</Segment>
</Metadata>

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<!-- 메타파일 metafile4.xml의 최상위 세그먼트에 대한 재생 리스트 -->
<Playlist>
  <MediaSegment>
    <MediaURI> //www.video_server1/video1 </MediaURI>
    <StartTime> 0 </StartTime> <MediaDuration> 300 </MediaDuration>
  </MediaSegment>

  <MediaSegment>
    <MediaURI> //www.video_server1/video2 </MediaURI>
    <StartTime> 230 </StartTime> <MediaDuration> 150 </MediaDuration>
  </MediaSegment>

  <MediaSegment>
    <MediaURI> //www.video_server2/video3 </MediaURI>
    <StartTime> 0 </StartTime> <MediaDuration> 80 </MediaDuration>
  </MediaSegment>

  <MediaSegment>
    <MediaURI> //www.video_server2/video3 </MediaURI>
    <StartTime> 230 </StartTime> <MediaDuration> 180 </MediaDuration>
  </MediaSegment>
</Playlist>
    
```

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