

(19)
(12)

(KR)
(B1)

(51) Int. Cl.7
H04N 7/015

(45)
(11)
(24)

2004 07 07
10-0439338
2004 06 28

(21) 10-2002-0002576
(22) 2002 01 16

(65)
(43)

10-2003-0062138
2003 07 23

(73) 가 161

(72) 98-9 203

101-502

210-24 302

101-501

305-1603

(74)
:

(54)

1.

2.

, ATSC(Advanced Television Systems Committee) 가 ATSC (A/90) -4 가

3.

PSI/SDF(Program Specific Information/Service Description Framework) ; 가 (A/90) ;
escrator), BIFS(Binary Format For Scene), OD(Object Descriptor), (Stream) ; -4 IOD(Initial Object D
; PSI/SDF ; (Demultiplexing) ;

4.

2

, ATSC, , -4,

1 ATSC

2

3

4

PSI/SDF

5

6

가

*

21 : 22 :

23 : -4 24 :

25 : 26 :

-4

가

, 가

가

ATSC(Advanced Television Systems Committee)
(A/90) , ATSC A/90

ATSC
(Synchronous)

A/90 가
(Synchronized) 가

(Asynchronous),

, ATSC 가 . , 가 , A/90
가 , 가 .
, 가 .
, 가 가 가 가
, ATSC . , ATSC 가 -4 가 가
, ATSC 가 -4 . , -4
tee) , , ATSC(Advanced Television Systems Commi
ATSC (A/90) 가 가
on Framework) PSI/SDF(Program Specific Information/Service Descripti
(A/90) ; , 가
-4 IOD(Initial Object Descriptor), BIFS(Binary Format For Scene), OD(Object Descriptor), (Stream
) (Demultiplexing) ; PSI/SDF ;
; ,
; ,
; , PSI/SDF(Program Specific Information/Service Description Framework)
(A/90) , 가
(reading) ; 가 가 가
; PES(Packetized Elementary Stream) -2
; -2
; , PSI/SDF(Program Specific Info
mation/Service Description Framework) (A/90) ,
가 (reading) ; 가
d Elementary Stream) -2 가 PES(Packetize
-2 ;
1 ATSC
1 , ATSC (Video)/ (Audio) (11,12) ,
(Program Multiplexer)(13) , ((14) , PSIP(Program and Syst
em Information Protocol for Terrestrial Broadcast and Cable) (15) , (Emission Multiplexer
)(16) , (Multiplexer Manager)(17) .
ATSC
/ (11,12) -2
(11) , AC(Audio Coding)-3 (12) ,

Stream) (13) / (13) (13) / (Elementary (Transport Stream) (14))
 -2 가 -2 (16) 가 가 -2
 (14) ATSC A/90 가
 PAT(Program Association Table) PMT(Program Map Table) D
 ST(Data Service Table) NRT(Network Resource Table) (13)
 (16)
 PSIP (15) PSIP (16)
 가
 -2 (16) PSIP / 가
 (17) , PSIP (15) , 가
 (13), (14)
 2
 2 (14)
 PSI/SDF(Program Specific Information/Service Description Framework) (21) , (21) , 가
 (A/90) (22) , (21)
 (Stream) -4 IOD(Initial Object Descriptor), BIFS(Binary Format For Scene), OD(Object Descriptor),
 -4 (23) , (21)
 (Demultiplexing) PSI/SDF
 (24) , (21) , (22) (24)
 (25) (25) (21)
 (26)
 ATSC (21) (17) , 가
 (A/90) (22)
 -2 (PSI : Program Specific Information)
 (SDF : Service Description Framework)
 (24)
 (21) -2 (25) -2
 (PTS : Presentation Time Stamp)
 (25) (26)가 (25) /
 (16) (21)
 (16)
 (17) (21)
 (Asynchronous Non-Stream Data), (Synchronous Non-Stream Data),
 (Synchronous Stream Data), (Synchronized Stream Data)
 m Data), PAT, PMT DST, NRT
 (22) 가 A/90 , IP(Internet Protocol)
 (datagram) MAC(Multimedia Access Control) DSM-CC
 (Addressable) , -2 PES
 (25)
 -4 (23) -4 (FlexMux)
 (Data Piping) (Private Section) PES(Private PES)
 (25)
 -4 (23) -4 IOD(Initial Object Descriptor), BIFS, OD, / IOD
 (21) BIFS, OD, / (FlexMux)
 (25)
 (24) (21) -2
 (PSI : Program Specific Information) (SDF : Service Description Table)
 (25) (24) -4

(21) IOD IOD PMT (loop)
 가 (loop) (association_tag)
 (24) -4 -4
 , DST(Data Service Table) (MIM
 E) 'application/mp4', 'application/m4', 'application/mpeg-4' 'application/mpeg4'
 (DST : Data Service Table) (pro
 tocol_encapsulation) '0x0B' (pro
 , ATSC 가 가
 MIME(Multimedia Internet Mail Extension) (DST)
 , -4 -4
 가 MIME [1]
 (Contents Type Descriptor) (DST) (TagInfo Loop)

[1]

콘텐츠 형태	콘텐츠 타입
엠펙-4 데이터	application/mpeg4
	application/mpeg-4
	application/m4
	application/mp4

(25) (21) (22) PES
 -2 -2 (26)
 (25) (PTS)
 (21) (21) (25) /
 (16)
 (13)
 3 3 6
 () (14)
 -4 -4 (17)
 -4
 (301). IOD -2 IOD PMT
 [1] -4 DST (Tabl
 nfo loop) (14) PSI/SDF (302). (303) A/90
 가 -4 PES -2 (304).
 (14) / (305).
 가 (13) (16)
 (306).
 가
 DSM-CC 가 PTS PES
 [1]

1

$$\text{연송시작시간} \leq \text{재생시각} \quad (PTS) - (\text{연송시각} + \text{디코딩시각})$$

$$\text{연송시각} = \text{데이터크기} \times \text{연송률}$$

ATSC -4 -4 ATS
C -4 [1] -4
(descriptor_tag), (descriptor length)
(ContentByte)
ContentTypeDescriptor() {
descriptor_tag
descriptor_length
for (j=0; j<descriptor_length; j++)
{ contentByte }
}
DST (TapInfo Loop) -4
(protocol_encapsulation) '0x0B'
Applications loop
CompatibilityDescriptor()
SubDescriptor loop
AppID()
Tap loop
Protocol_encapsulation =0x0B
SystemStateFlag
ResourceLocation
Tap()
TapInfo loop
String AppData
AppInfo loop
... ..
4 PSI/SDF
4 PSI/SDF (302) 가
(401) -4 IOD (402), I
OD IOD PMT (403), DST
(TapInfo loop) (404), PSI/SDF (405), PSI/SDF
-2 (406). PSI/SDF (405), PSI/SDF
-4 (406). PSI/SDF (405), PSI/SDF
-2 (406).
5 PES -2 (,
) (305), -2 (501), -2 (,
(502) -2
(503).
6 가
6 -2 (601), (602). , -2
(602), 가 (603),
(604). (, , ,
) .
, 가 , 가
가 가
, 가 , 가 , 가
, , , , 가 , 가

, ATSC 가 . -4

(57)

1.

PSI/SDF(Program Specific Information/Service Description Framework) ; 가 (A/90) ; IOD(Initial Object Descriptor), BIFS(Binary Format For Scene), OD(Object Descriptor), (Stream) ; (Demultiplexing) PSI/SDF ; ; ;

2.

1 가 A/90 -2 (PSI : Program Specific Information) (SDF : Service Description Framework) -2 (PTS) / -2 ; ; ;

3.

1 2 가 (FlexMux) (Data Piping) PES(Packitized Elementary Stream) -4 ; ; ;

4.

3 가 IOD, BIFS, OD, / IOD (FlexMux) -4 ; ; ;

5.

4 가 (PSI : Program Specific Information) -2 (SDF : Service Description Table) IOD IOD PMT(Program Map Table) -4 (loop) 가 (association_tag) , DST(Data Service Table) (MIME) 'application/mp4', 'application/m4', 'application/mpeg-4' 'application/mpeg4'

6.

5 가 (PTS)

7.

;
 , PSI/SDF(Program Specific Information/Service Description Framework
 k) (A/90) ; 가 (reading)
 ; 가 가
 ;
 PES(Packetized Elementary Stream) -2
 ;
 -2

8.

7 ,
 가 -4 -4 ; IOD , IOD IOD
 PMT ;
 DST(Data Service Table) (TapInfo loop)
 PSI/SDF , PSI/SDF -2 1
 ;
 I/SDF , -4 -2 2 PSI/SDF , PS

9.

7 ,
 -2 -2 , -2 ,
 (PTS)

10.

7 ,
 가 -2 , ,

11.

7 ,
 가 (A/90) PSI/
 SDF (Asynchronous Non-Stream Data), (Synchronous Non-Stream Data),
 (Synchronous Stream Data), (Synchronized Stream Data)
 , PSI/SDF PAT(Program Association Table)
 PMT(Program Map Table) DST(Data Service Table) NRT(Network Resource Table)

12.

7 11 ,
 -4 , [1] , DST

13.

;
 , PSI/SDF(Program Specific Information/Service Description Framework
 k) ;

(A/90)

가

(reading)

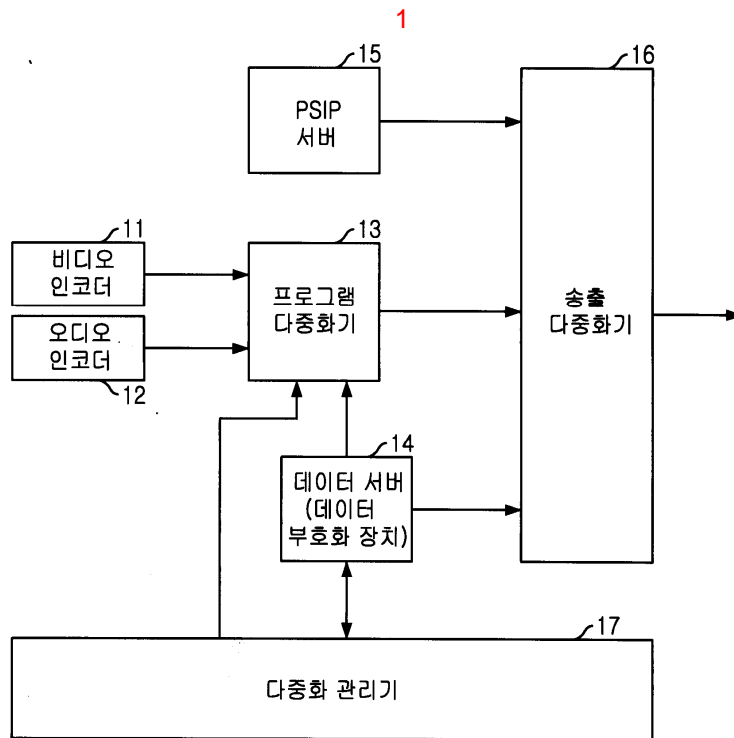
가

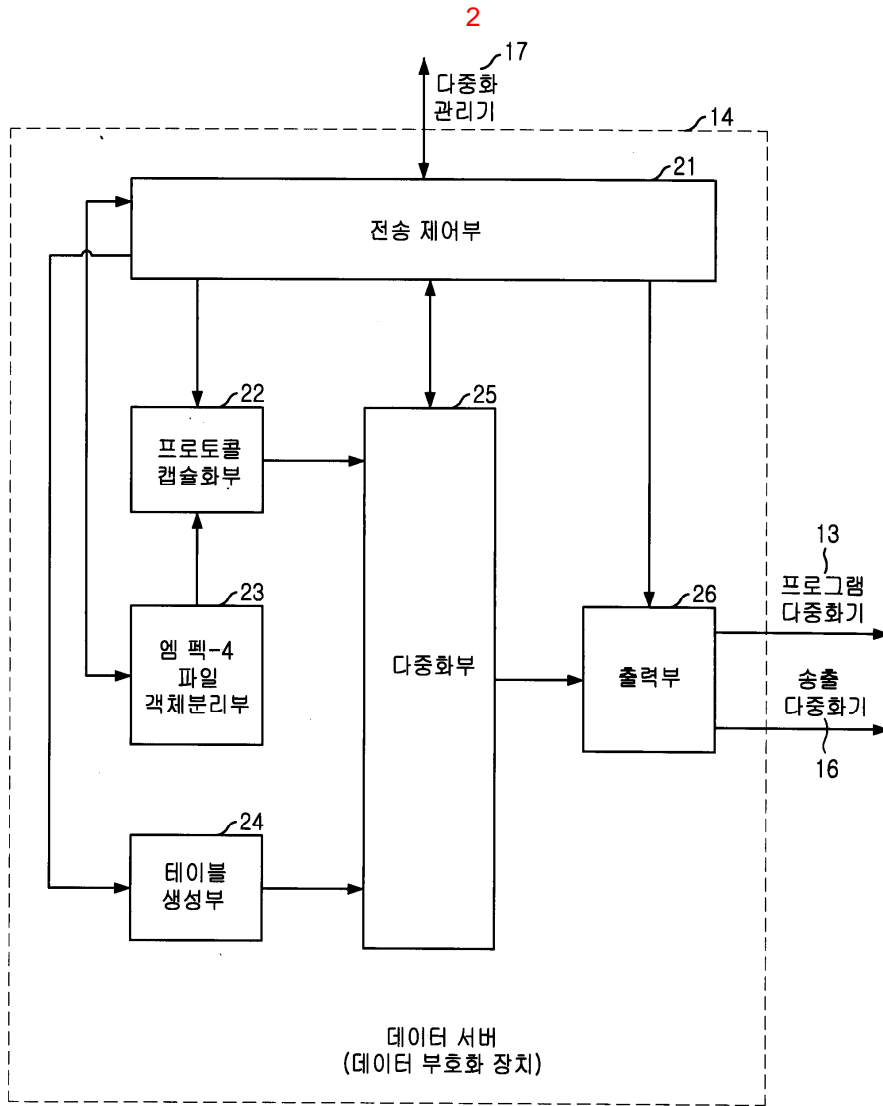
가

PES(Packetized Elementary Stream)

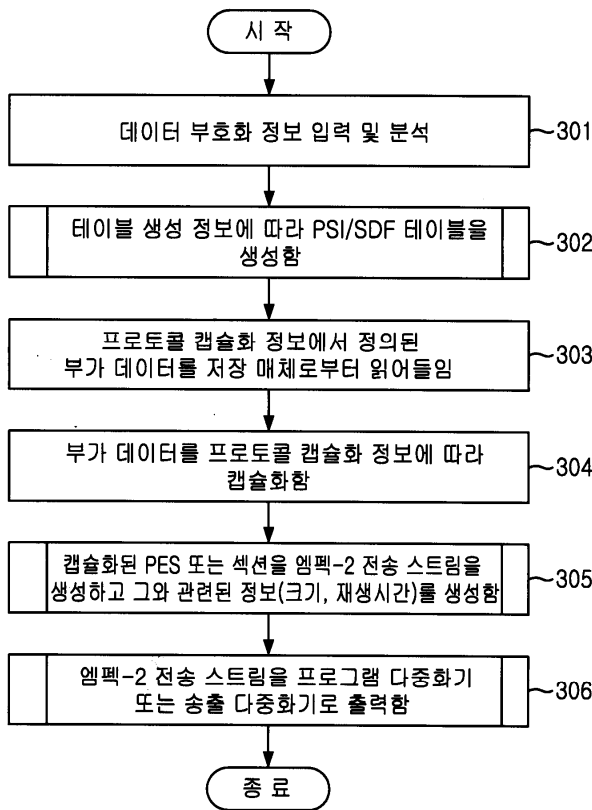
-2

-2

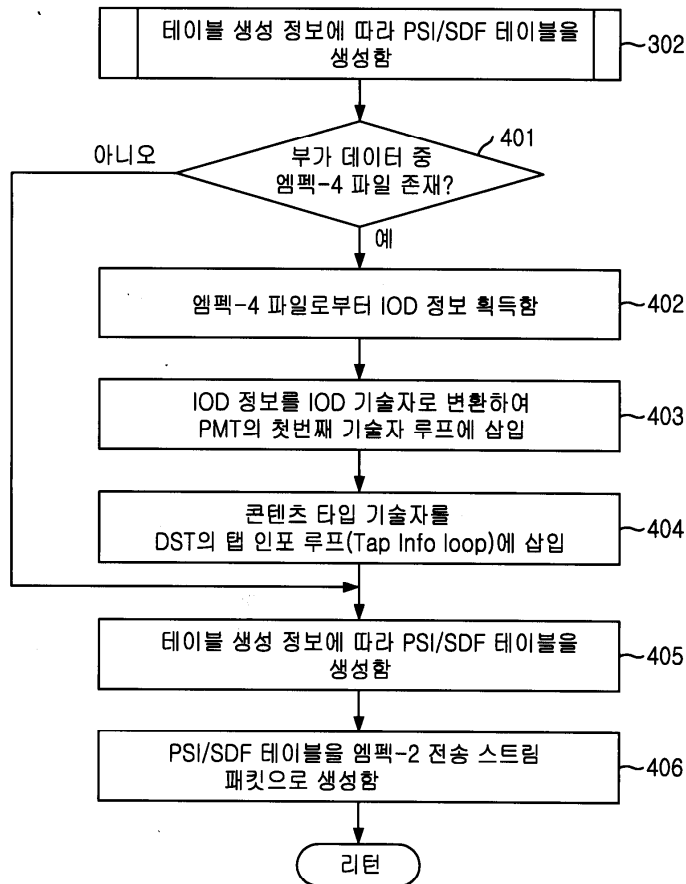




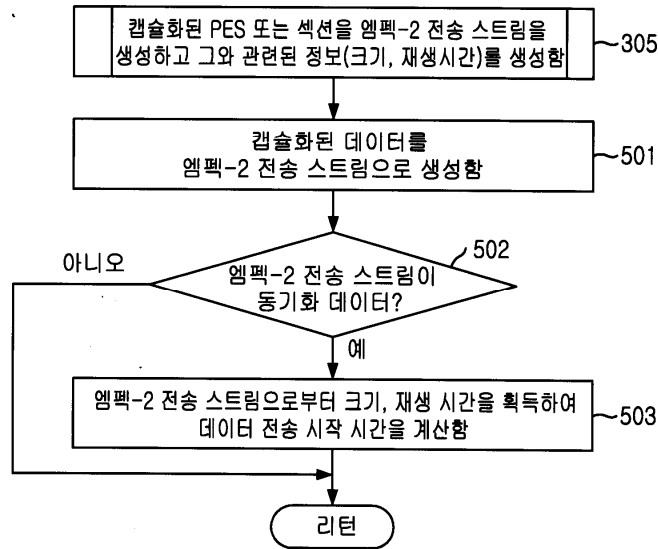
3



4



5



6

