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(12)(KR)
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(43)2002 - 0006429
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(22) 2001 07 05

(30) 09/614,632 2000 07 12 (US)

(71) .
46(72) , -
, 10547, , 1325
,
, 46140, , 6920

(74)

:

(54) M P E G

- , (201). -
(remapped) (202).
(PID) , - PID (210 , 213).

2

1

2 1

3 1 DSS

4 2 DSS

5 2 DSS

< >

100 : 110 :

120 : DSS 130 :

(backward compatible),

()

(ISDN : Integrated Services Digital Network)

(PSTN : Public Switched Telephone Network)

(DSS : direc

t satellite systems)

TV (TV) : National Television Systems Committee)

V(TV) , NTSC(, (30*1000/1001) ≈ 29.97 / (fps) . SDTV SDT

97 fps . NTSC 60 AC " (out of phase)" 29.

. PAL(Phase Alternation by Line)

NTSC (interlaced) (in
 interleaved)
 , NTSC , 29.97 fps , 29.97 29.97
 , $29.97 \times 2 = 59.94$. NTSC
 $720(h) \times 480(v)$, 720×480
 720×240 (specification) CCIR Rec.601 , CCIR Rec.601
 (acquisition semantic), " "
 (" " PAL, NTSC SECAM).

/ (ISO/IEC) 11172 가 -1
 (") (MPEG - 1) , ISO/IEC 13818 (" (ITU
 : International Telegraph Union) H.261(Px64) . MPEG , " "
 (,) , M
 PEG MPEG " "
 MPEG - 1 30 (fps) 352×240 (SIF) . MPEG
 , MPEG - 1 1.2 Mbits, 150 KB/ VHS
 , 가 MPEG - 1 , - ().

1994 MPEG - 2 MPEG - 1 , MPEG - 1 , HDTV(
 TV)
 . MPEG - 2 , CCIR Rec.601 NTSC - TV
 . (29.97 fps $720 / \times 480$). MPEG - 2
 , . MPEG - 2
 . MPEG

. MPEG - 2 MPEG
 I , P , B . I ,
 - ,
 , P 가
 I P . P P
 . I P " (anchor)" , P
 B . " " B B
 가 . H.261 I P

MPEG (GOP) 12 15
 GOP I , B P M
 GOP P , N GOP (, GOP
 I) .

MPEG

. MPEG - 2 ,
 (nested) , GOP , (Slice layer),
 ,
 (PES : packetized elementary stream)
 (encapsulated). PES , ,
 PES .

가

, MPEG ,
 , - (PID) 8 100
 가 . DSS , PID SCID(ID)
 . SCID 12 -
 , SCID PID .

MPEG - 2

. PES , , MPEG - 2 PES

, MPEG - 2 , DSS , DSS
 DSS 544 / 480 / . 29.97 /
 . DSS DSS
 TV
 / (IRD) 45.72cm
 , IRD - TV . IRD
 , - (front - end)
 . MPEG - 2 , IRD MPEG - 2

MPEG - 2 , 4 " " , /
 (scalability)

Y()

가 (MP : Main Profile) {
 (Medium)} (MP@ML) MPEG - 2 " " SD
 (, NTSC PAL) 480
 2:1 720
 (blanking interval) 가 , 525 × 85
 8 13.5 MHz NTS
 C - (MP@HL) HD
 TV

TV HD -
 , SD HD 가 , SD /
 " (backward compatible)"
 , SD DSS IRD MP@ML DSS
 HD HD SD , DSS SD
 HD SD
 가 ,
 ,
 ,

가 .
 -
 - (remapped). (enhancem
 ent) (PID) , -
 PID

, MPEG - 2 , MPEG - 2 DSS SD IRD - (backward - compa
 tible) 가 .

()

1 , ,
 (100) (110)
 59.94 Hz(fps) 2
 MPEG - 2 59.94 Hz(fps)
 (IC) (110)

, DSS (120)

IC , , DSS SD IRD , MPEG - 2 MP@ML (synta
x) . , - DSS SD IRD
SD
SD MP@HL
HDTV EDTV()

29.97 Hz(fps) , SDTV
, EDTV 59.94 Hz EDTV
(110)
(, 59.94 Hz) HDTV EDTV
, 29.97 Hz(fps) MP@ML
, SDTV , MP@ML

(130) , ()
(130) DSS IRD ,
, SDTV 29.97 fps
(130) HDTV EDTV , EDTV
59.94 fps

PID가 , SCID DSS 가
, SCID IO P1 P2...P14
GOP MPEG - 2 MP@ML GOP , M=1, N=15
15 /29.97fps=0.5
1/29.97 , NTSC
SCID(SCID i) DSS

MPEG - 2 B , B0 B
1 B2...B14 , N=15
1/29.97 SCID(, SCID j) SCID
DSS

2 , (100) (110) (200)
가 , DSS (120)
(110) MPEG - 2 , MPEG - 2 59.94 Hz
(201). GOP M=2, N=30 GO
P :

B0 I1 B2 P3 B4 P5 B6 P7 B8 P9 B10 P11 B12 P13 B14 P15 B16 P17 B18

P19 B20 P21 B22 P23 B24 P25 B26 P27 B28 P29

(110) (I P) (202):

I1 I0

Pn P(n - 1)/2

, MP@ML
 , MP@ML
 , (110) IC B I, P
 (210), SCID i SCID j (211, 212).
 , (110) DSS 3 (213).
 3 , I0 (3) SCID i
 가 .

, 가 DSS
 (220). , SCID i, j DSS (120)
 , DSS (120) DSS (130)
 IRD , IRD
 / , MPEG

(130)가 MPEG - 2 DSS (MP@ML) ,
 2 - , MPEG - 2 DSS
 MP@ML , (130) MP@
 ML , DSS (130) 59.94 Hz
 , 4 ,
 SCID i , SCID j
 , SCID i I P - (130) (IC)
 (130) MP@ML MPEG - 2 I0
 SCID i P1 SCID i IC
 , SDTV MP@ML

, (130) , 2 -
 MP@HL - 1440 DSS
 (130)가 59.94 Hz
 , 5 , 59.94 Hz

, , , SD , SD IRD가
 , HD IRD " "
 " 가 " - 가 MPEG
 (SD IRD가
).

,
 가 .

(57)

1.

- (a) (initial temporal reference) -
 ;
- (b) - (remapping) ;
- (c) (base and enhancement transport bitstreams)
 - (PID) , - PID , ,

2.

1 , MP@ML , PID MP@M
 L , .

3.

1 , PID PID
 , MP@ML , MP@HL , .

4.

1 , I P , - B
 , .

5.

1 , (b) 가
 , .

6.

1 , PID (SCID) , .

7.

(110) ,

(a)

-

(remapper)(202) ;

(b)

, - PID (210 - 213) (PID)

8.

7 , MP@ML , PID
MP@ML , .

9.

7 , , PID PID
 , MP@ML , MP@HL
MP@HL , .

10.

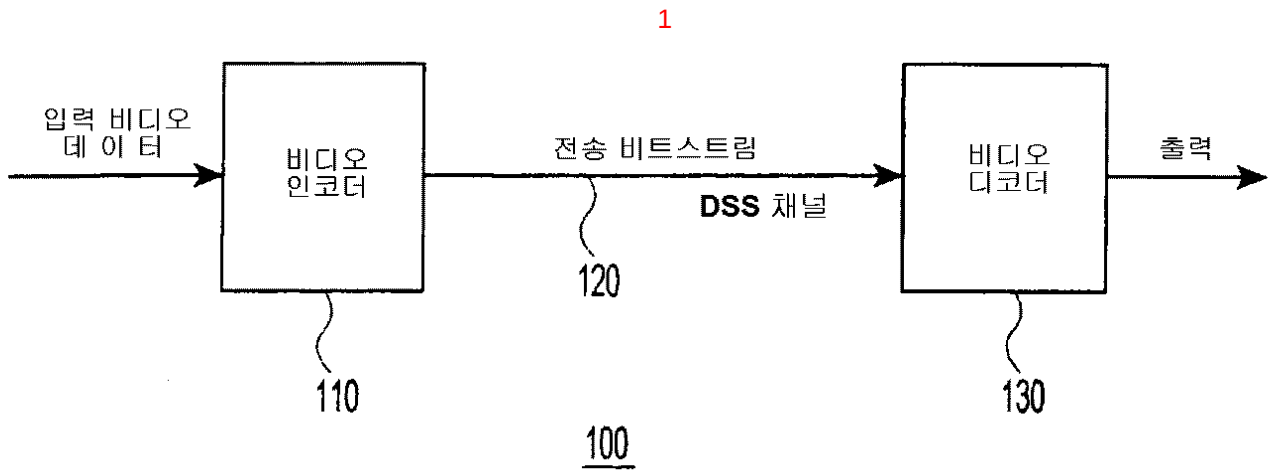
7 , I P , - B
 , .

11.

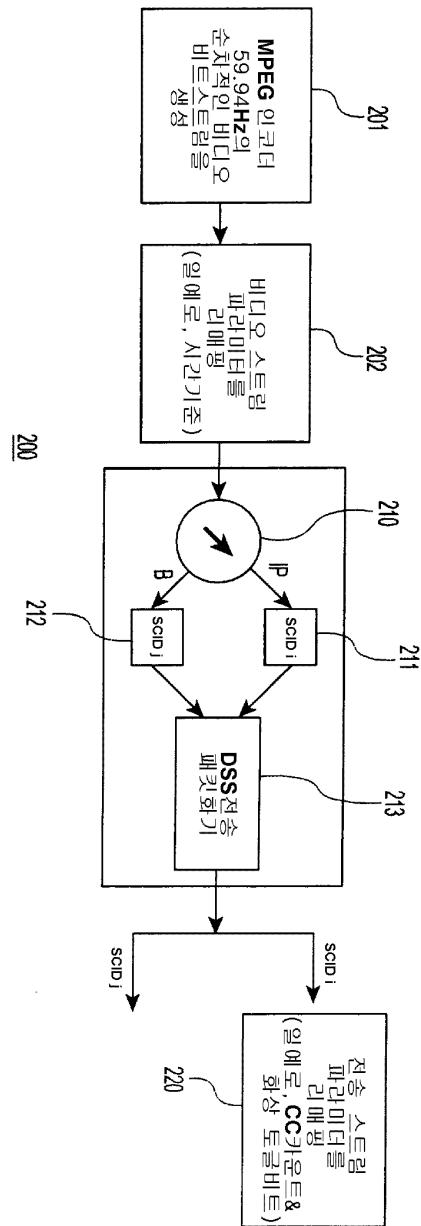
7 , 가
 , .

12.

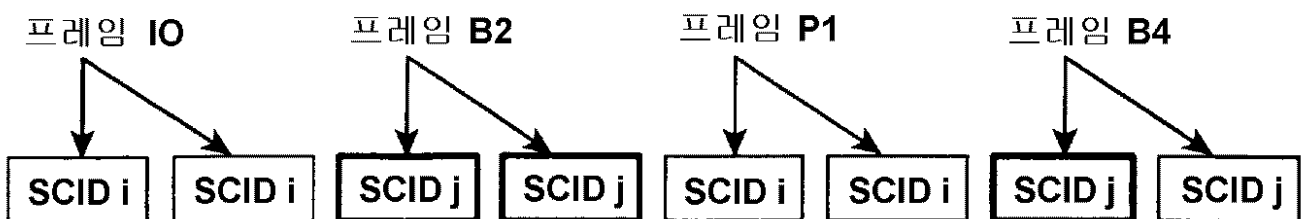
7 , PID (SCID) ,
 .



2

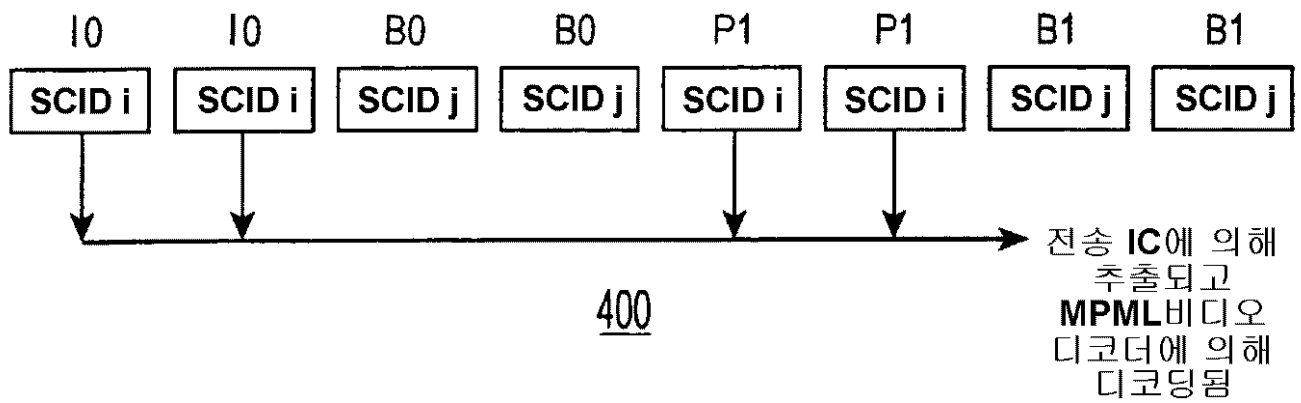


3



300

4



5

