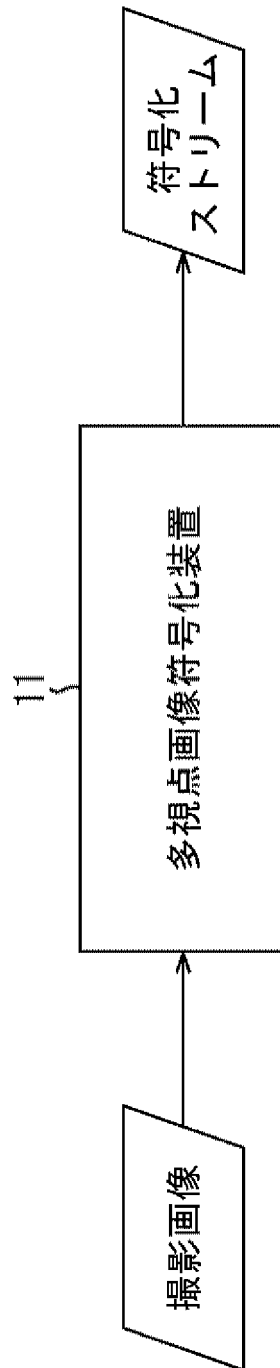


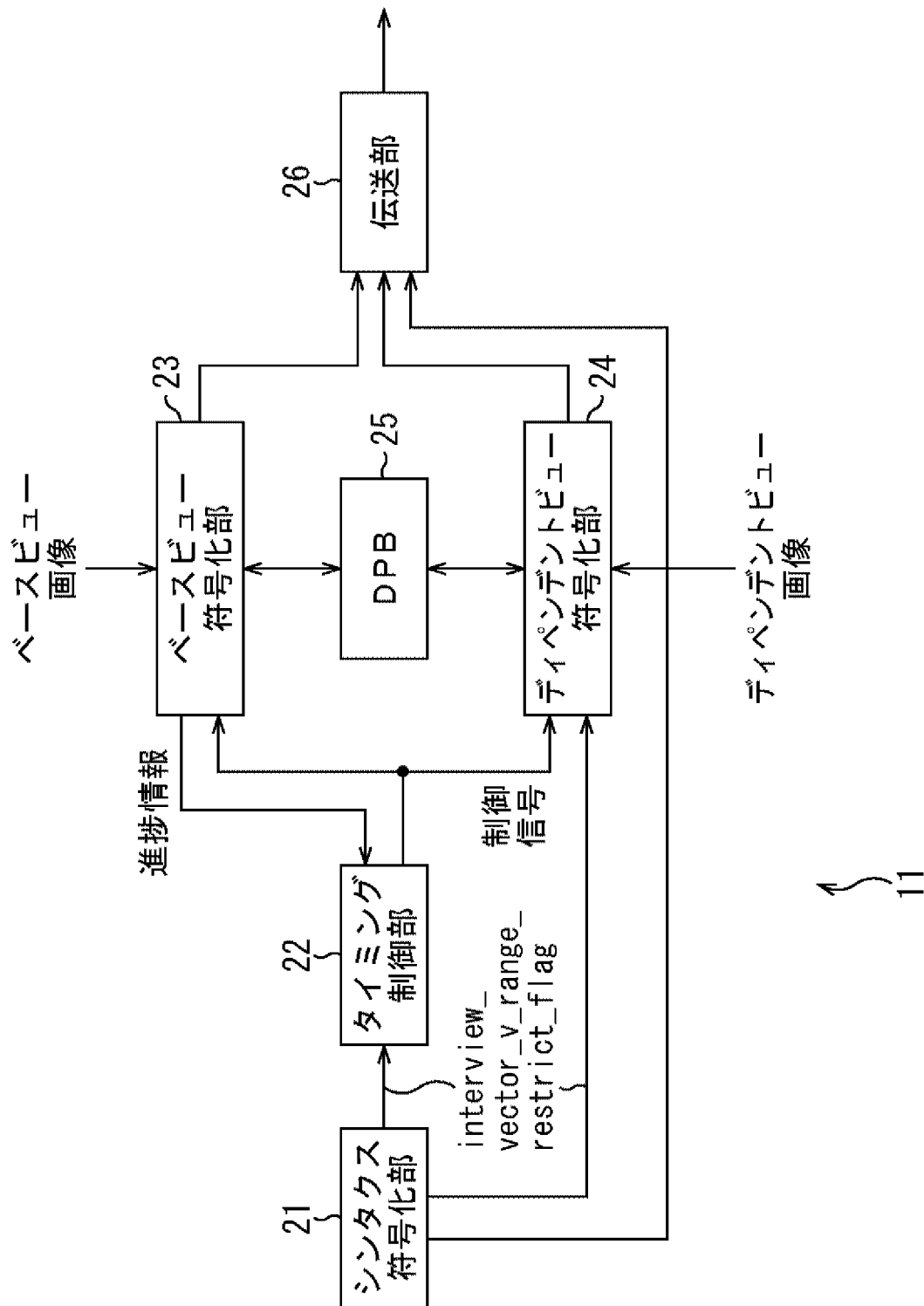
[図1]

図1

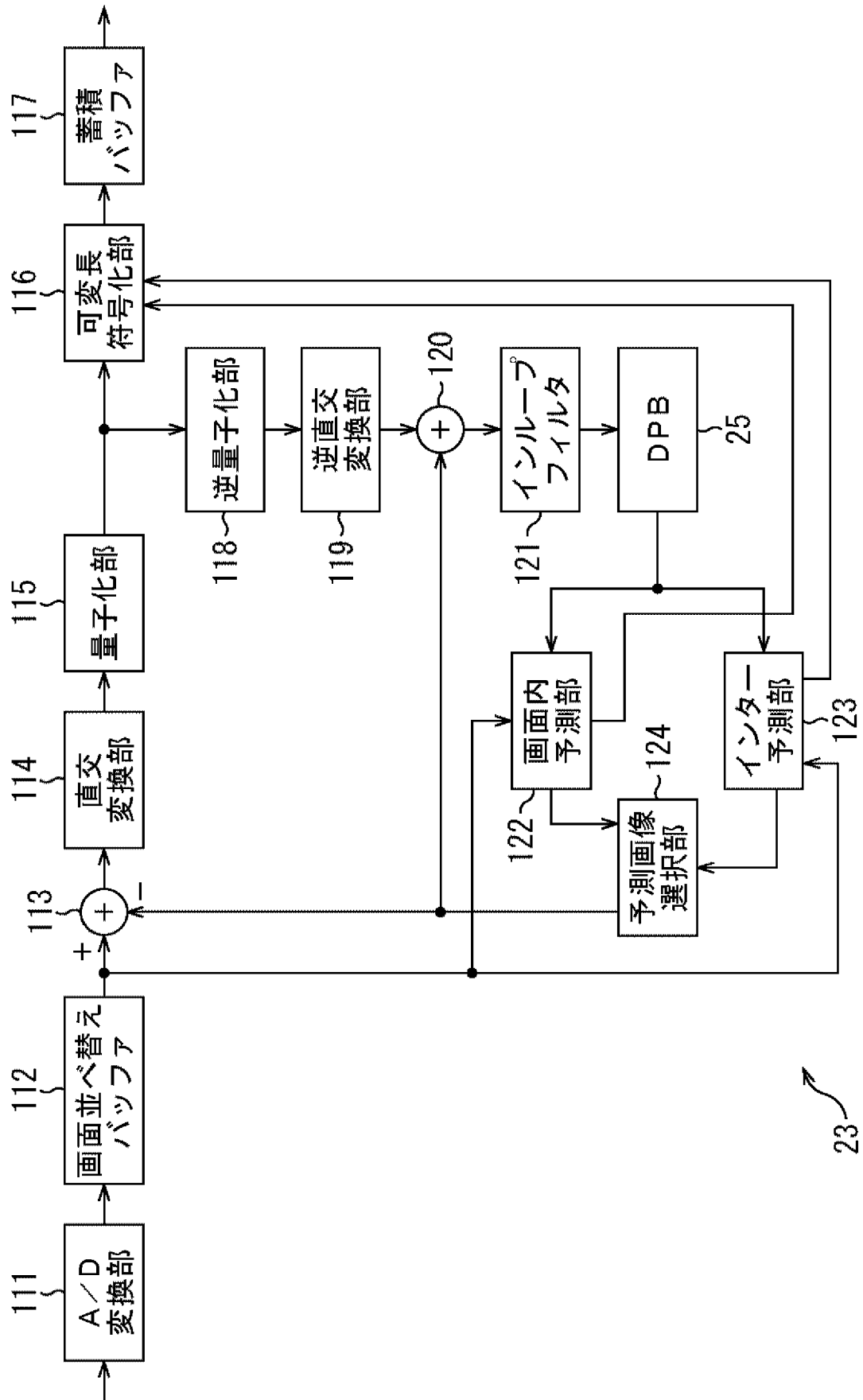


[図2]

図2

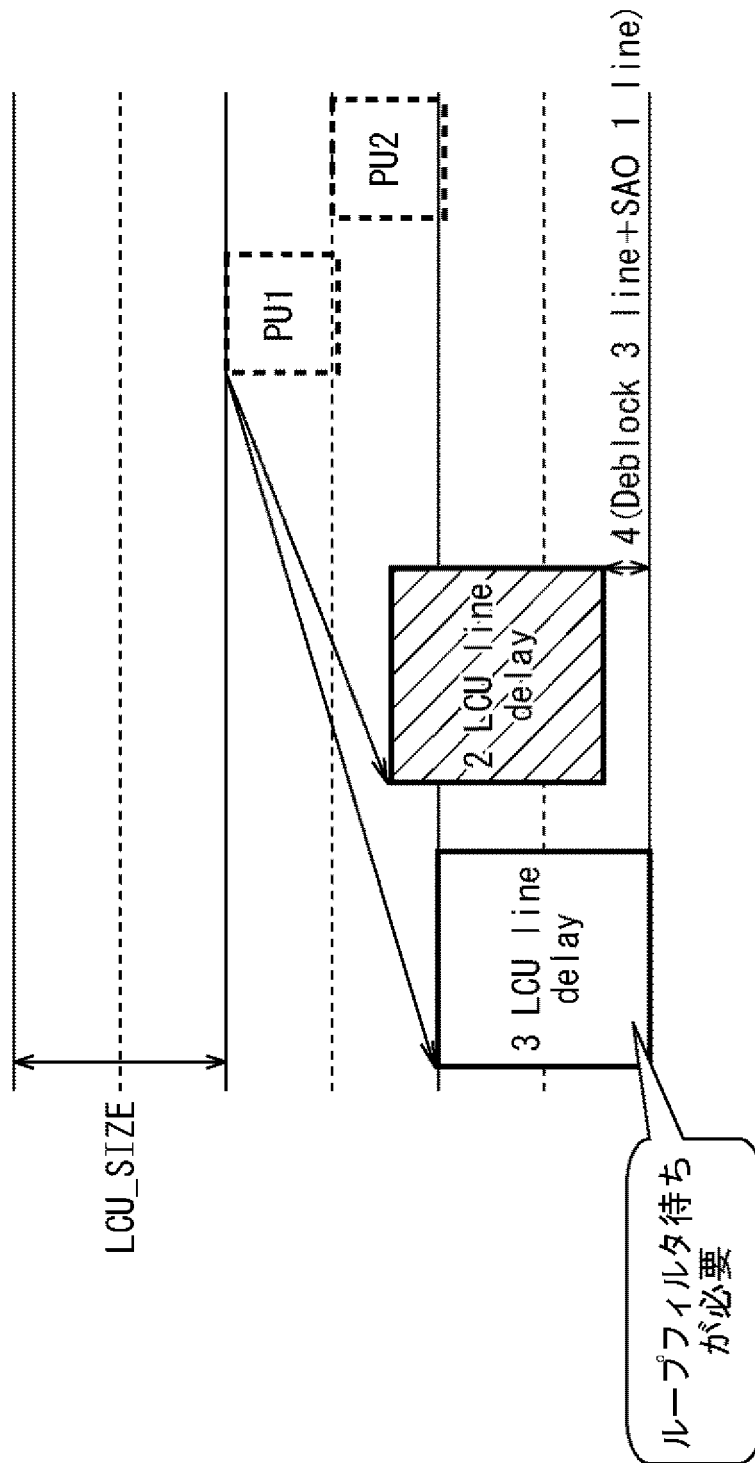


[図3]
図3



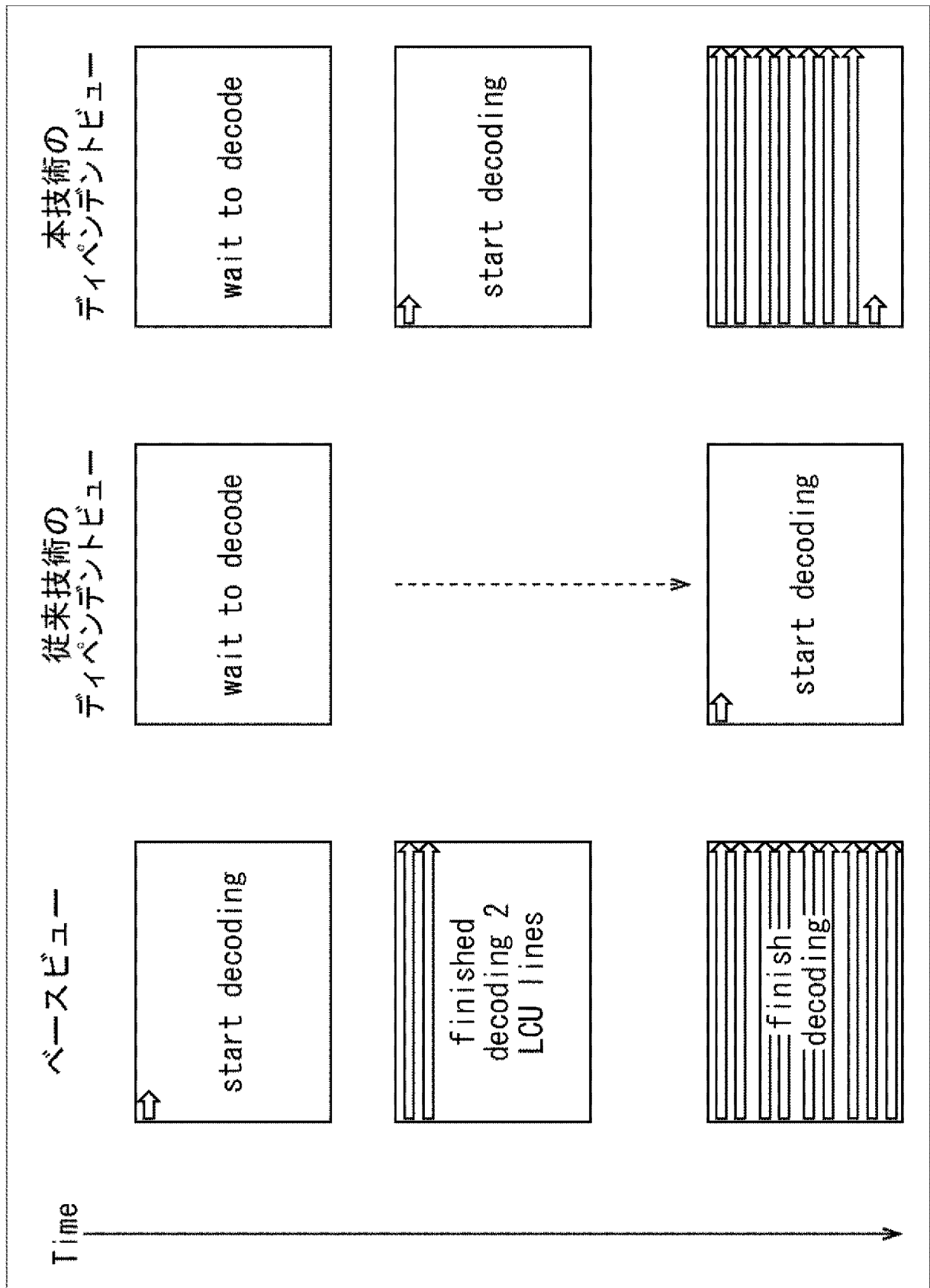
[図4]

図4



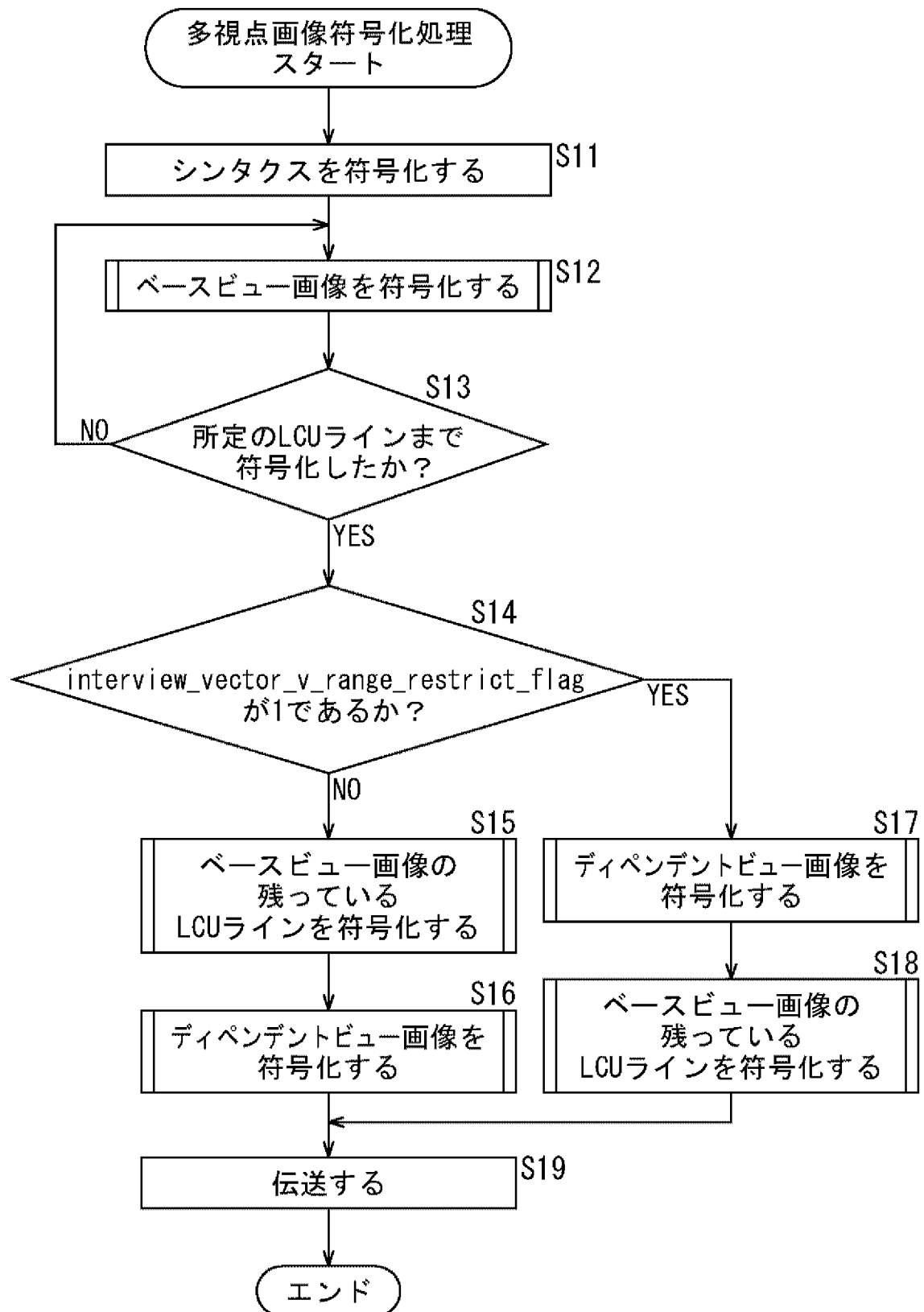
[図6]

図6



[図7]

図7



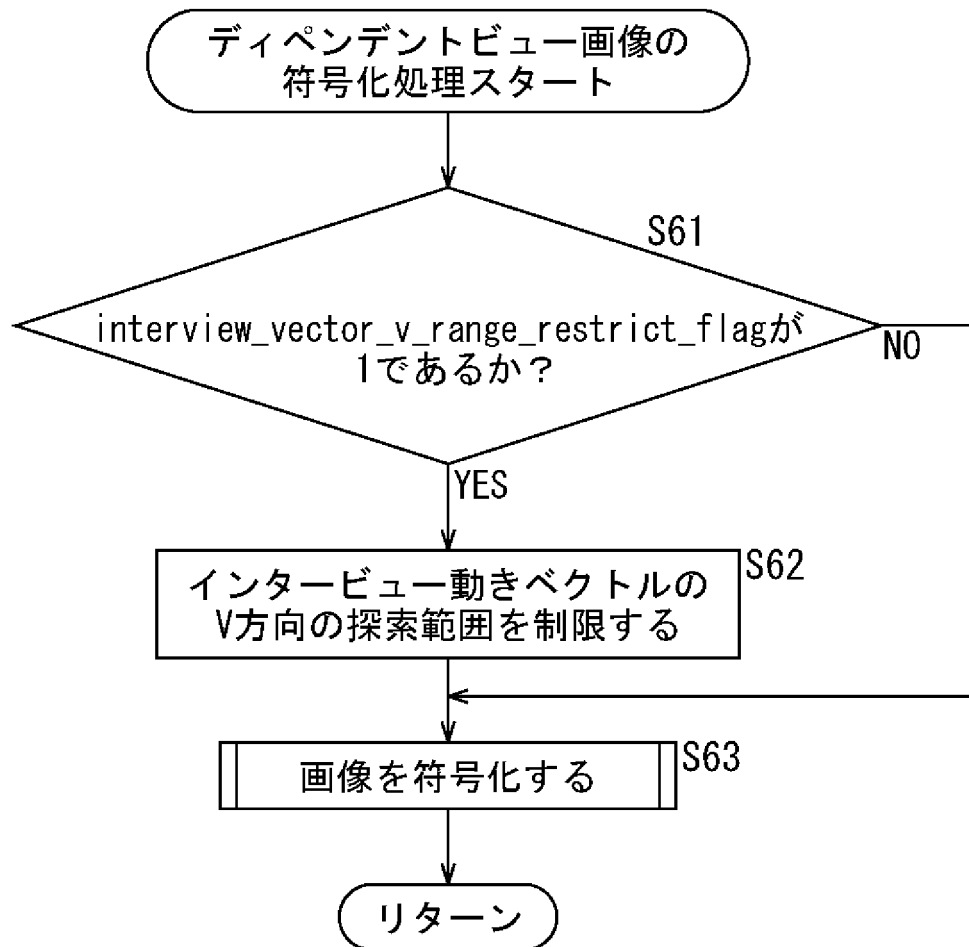
[図8]

図8



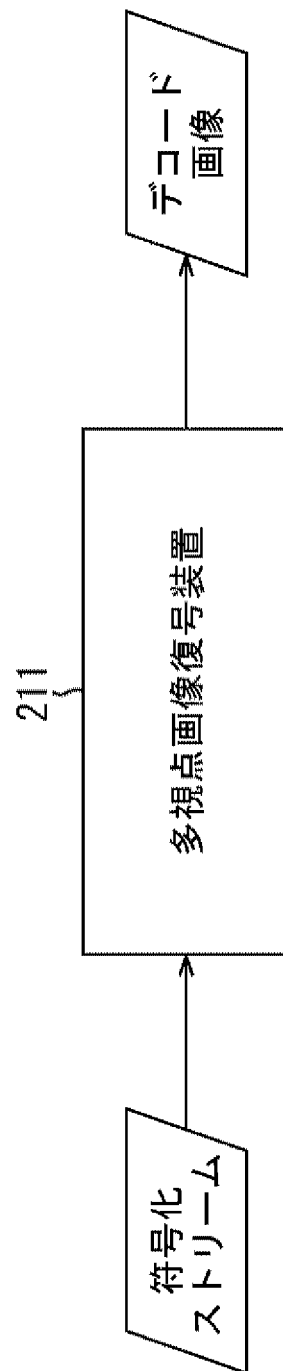
[図9]

図9



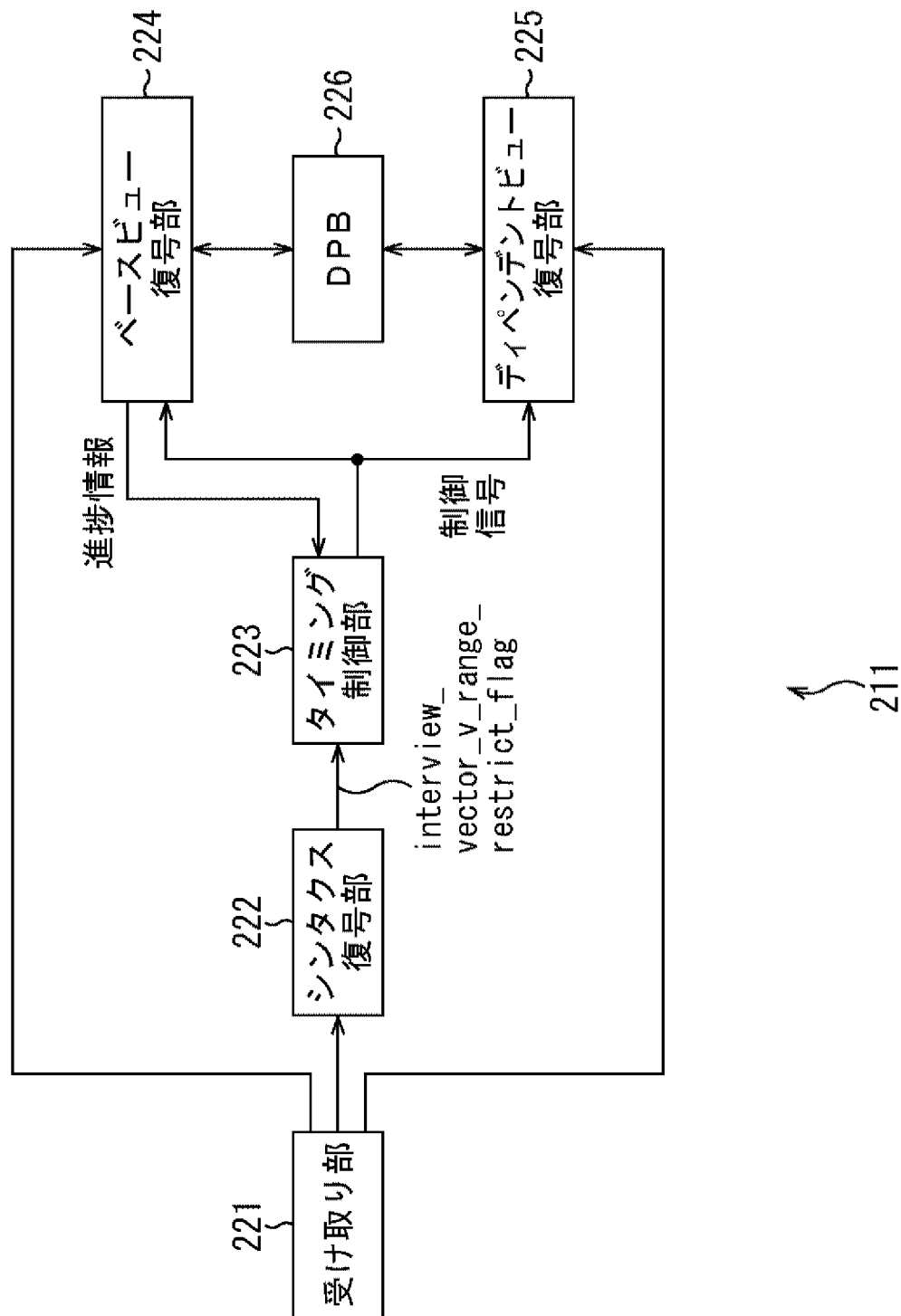
[図10]

図10

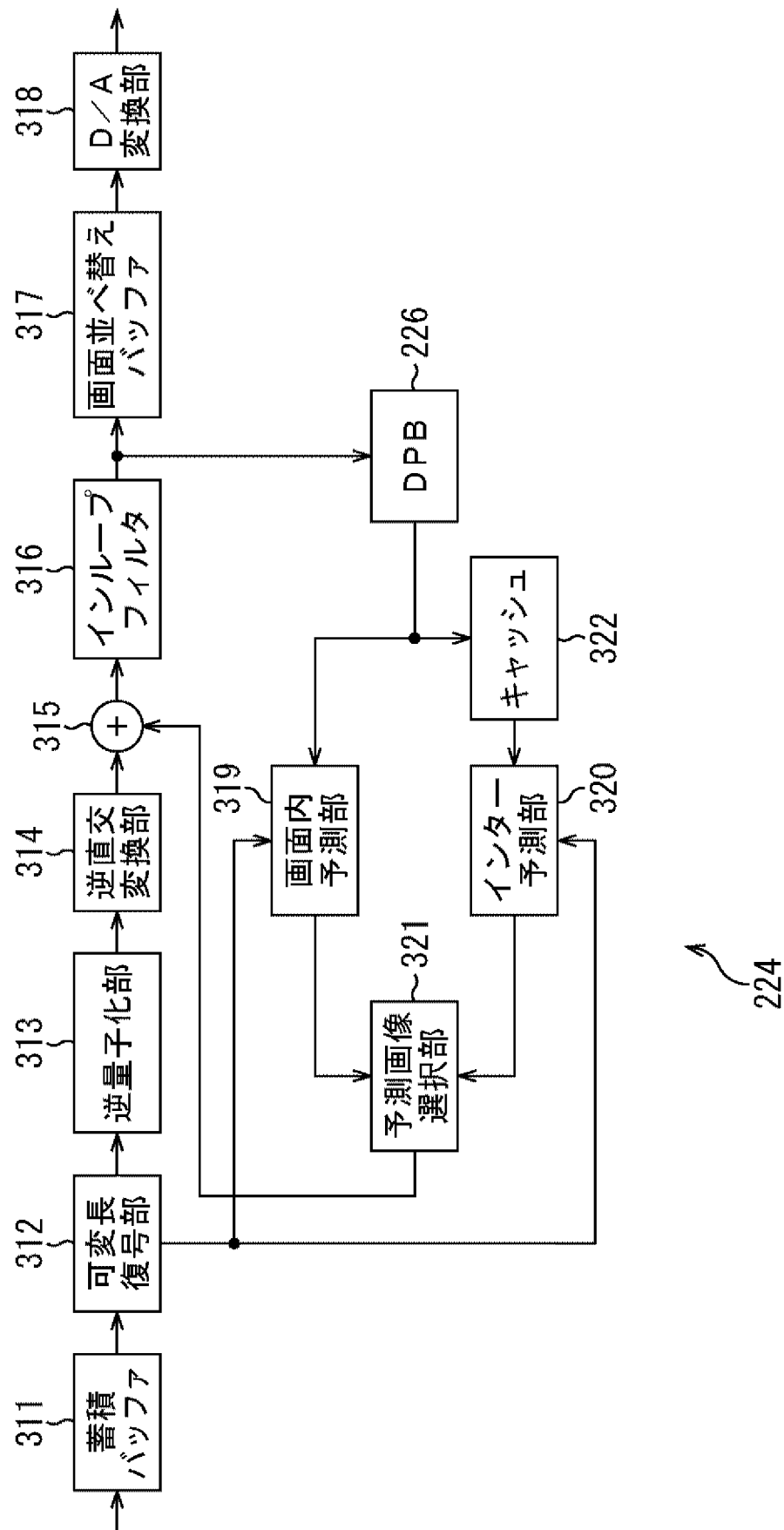


[図11]

図11

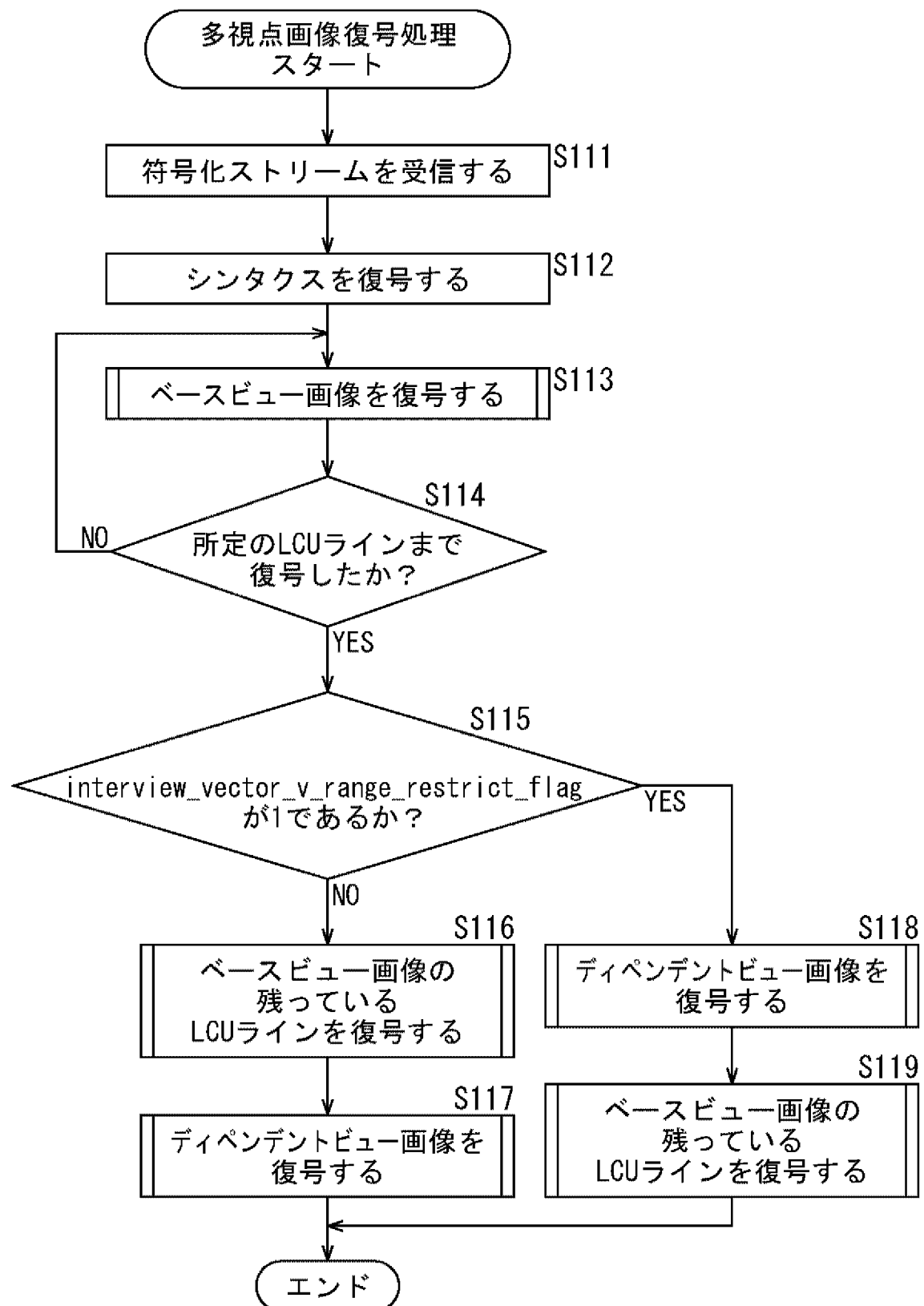


[図12]
図12



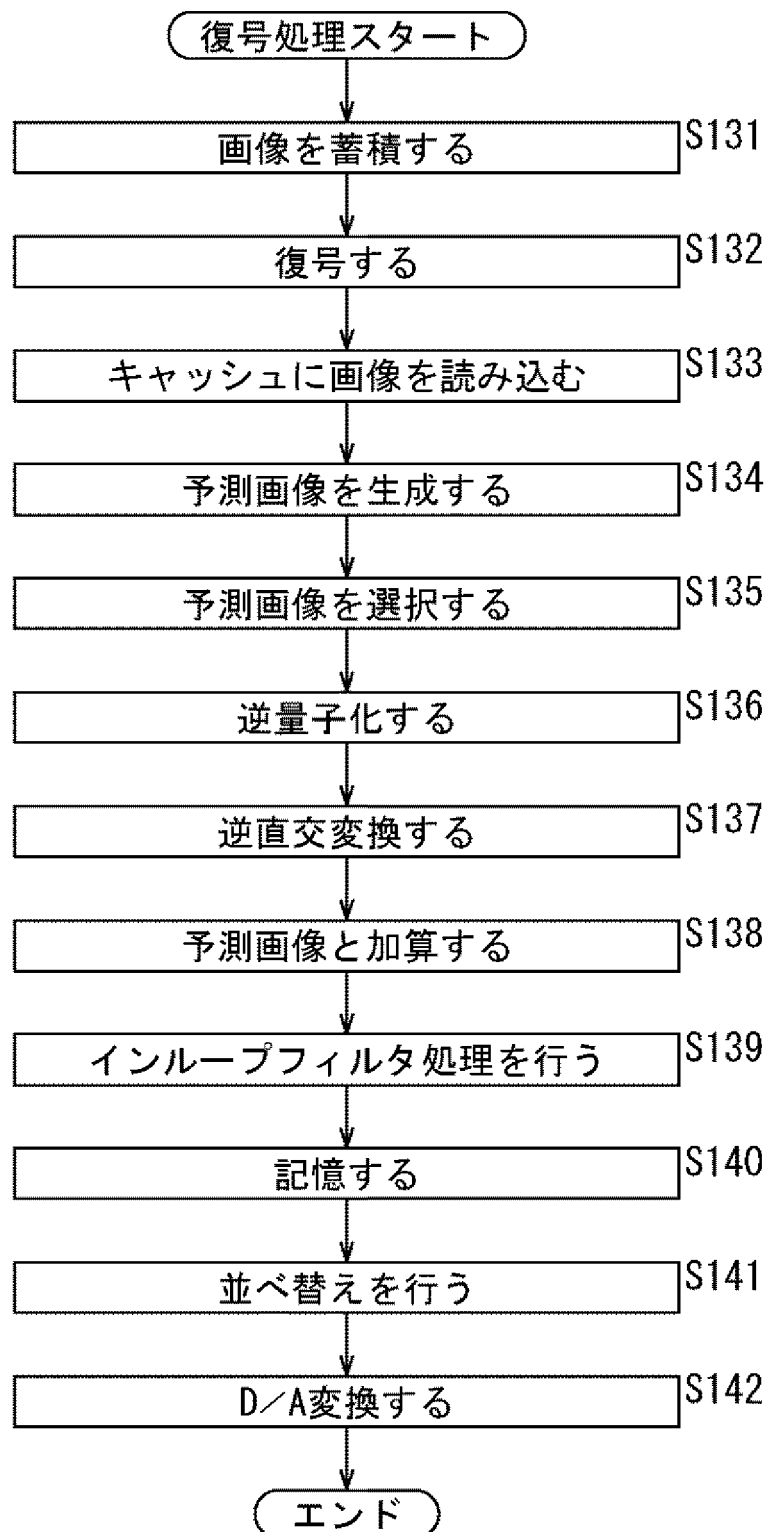
[図13]

図13



[図14]

図14



[図15]

図15

Syntax

```

-- seq_parameter_set_rbsp( ) {
...
  • if ( profile_idc == “Multi-view support Profile” ) {
    -- interview_vector_v_range_restrict_flag      u(1)
  • }

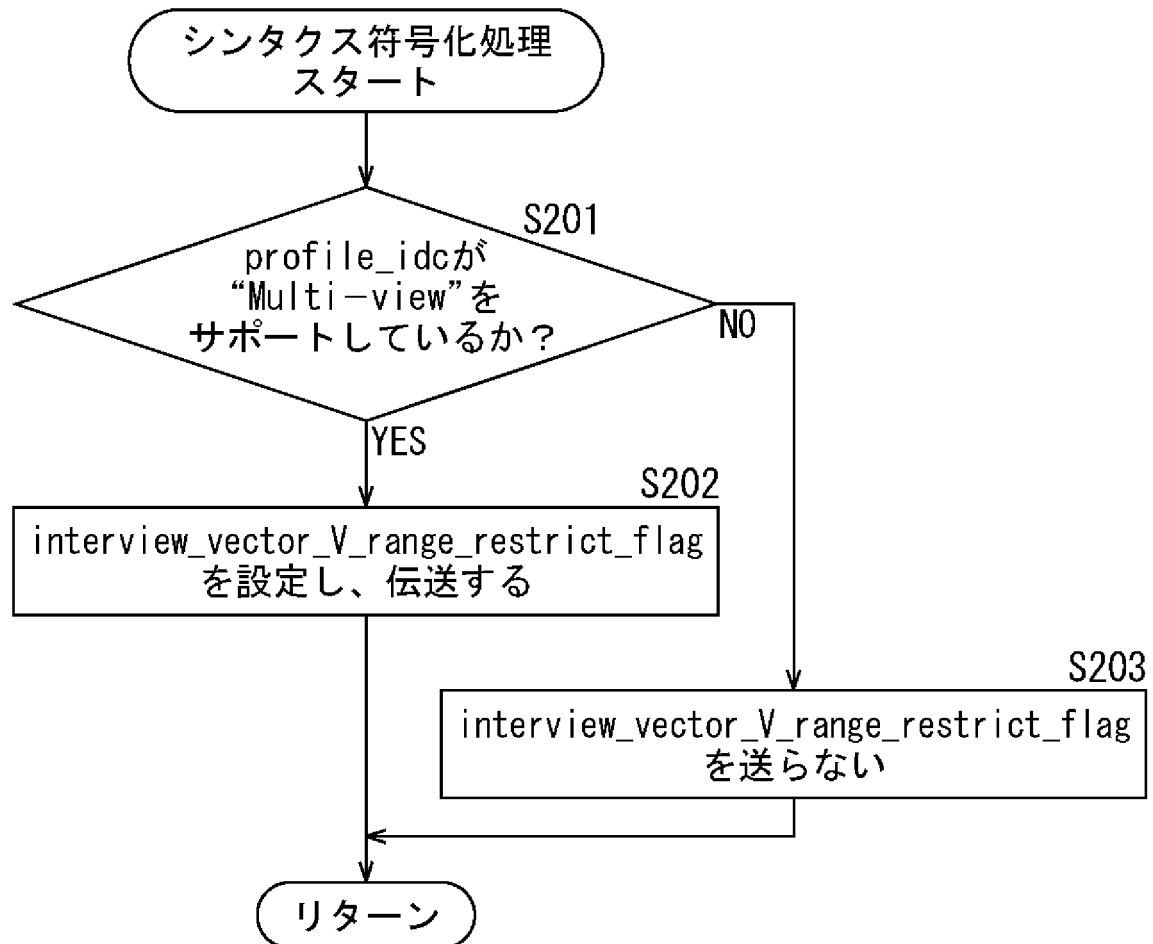
```

Semantics

- interview_vector_v_range_restrict_flag equal to 1 represents vertical component of inter-view vectors, which are used in the dependent view pictures, is equal to or less than (LCUsize-8) in units of luma samples. If not present, the value shall be inferred to be 0. If profile_idc is equal to “Stereo profile”, the value shall be set equal to 1.

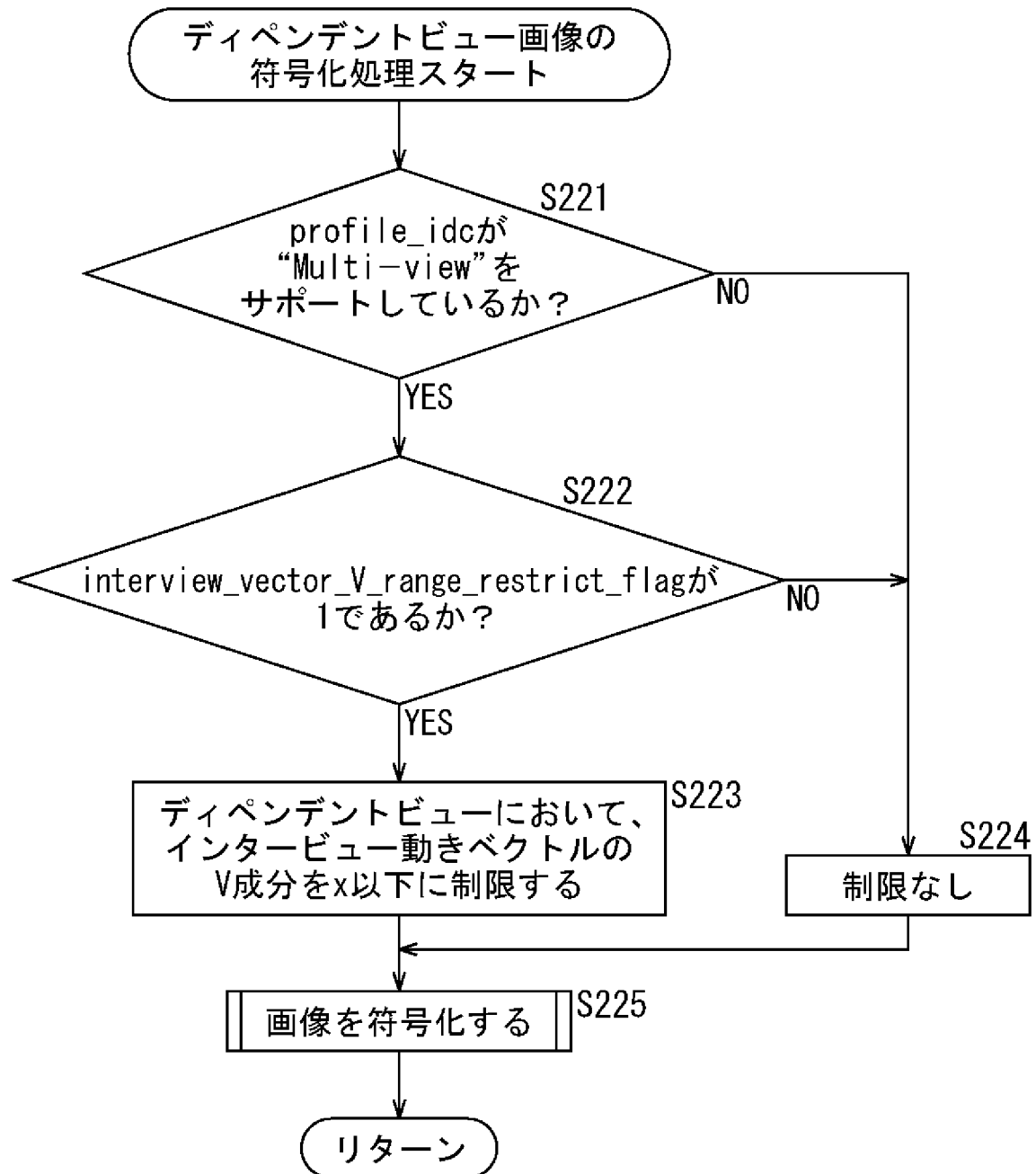
[図16]

図16



[図17]

図17



[図18]

図18

Syntax

```

- seq_parameter_set_rbsp( ) {
    ...
    · if ( profile_idc == "Multi-view support Profile" ) {
        interview_vector_v_range_restrict_flag    u(1)
        if (interview_vector_v_range_restrict_flag == 1 ) {
            interview_vector_v_range                u(8)
        }
    }
}

```

Semantics

- interview_vector_v_range_restrict_flag equal to 1 represents vertical component of inter-view vectors, which are used in the dependent view pictures, are equal to or less than the value interview_vector_v_range in units of luma samples. If not present, the value shall be inferred to be 0. If profile_idc is equal to "Stereo profile", the value shall be set equal to 1.
- interview_vector_v_range represents the maximum value of vertical component of the inter-view vectors in units of luma samples. If not present, the value shall be inferred to be 0.

[図19]

図19

Syntax

```

- seq_parameter_set_rbsp( ) {
    ...
    · if ( profile_idc == "Multi-view support Profile" ) {
        interview_vector_v_range_restrict_flag    u(1)
        if ( interview_vector_v_range_restrict_flag == 1 ) {
            interview_vector_v_range              u(8)
            interview_vector_h_range              u(8)
        }
    }
}

```

Semantics

- interview_vector_v_range_restrict_flag equal to 1 represents vertical component of inter-view vectors, which are used in the dependent view pictures, are equal to or less than the value interview_vector_v_range in units of luma samples. If not present, the value shall be inferred to be 0. If profile_idc is equal to "Stereo profile", the value shall be set equal to 1.
- interview_vector_v_range represents the maximum value of vertical component of the inter-view vectors in units of luma samples. If not present, the value shall be inferred to be 0.
- interview_vector_h_range represents the maximum value of horizontal component of the inter-view vectors in units of luma samples. If not present, the value shall be inferred to be 0. If the value is 255, it represents that there is no restriction about the horizontal component.

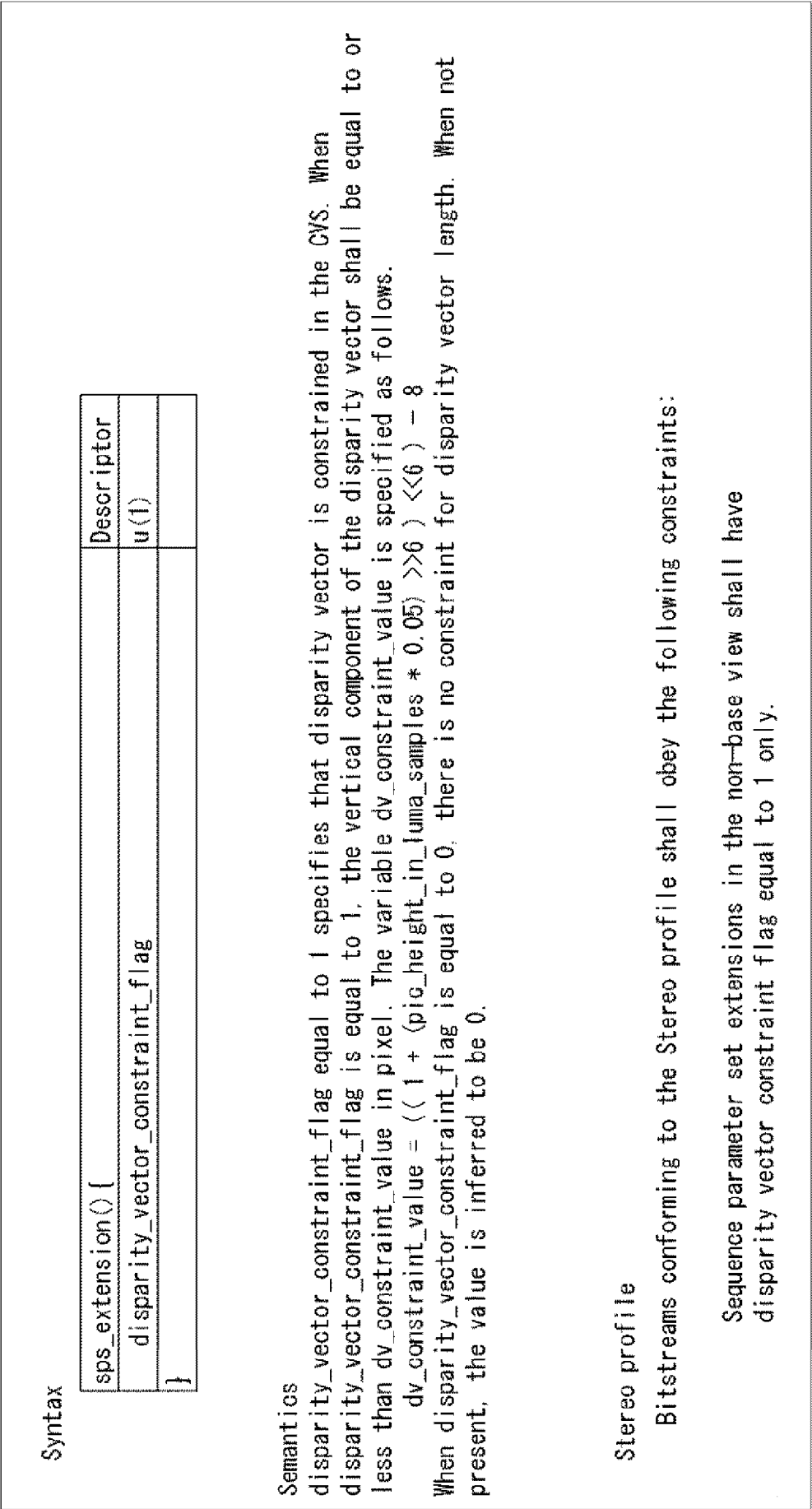
[図20]

図20

Format nickname	Luma width	Luma height	constraint
SQCIF	128	96	56
QCIF	176	144	56
QVGA	320	240	56
525 SIF	352	240	56
CIF	352	288	56
525 HHR	352	480	56
625 HHR	352	576	56
Q720p	640	360	56
VGA	640	480	56
525 4SIF	704	480	56
525 SD	720	480	56
4CIF	704	576	56
625 SD	720	576	56
480p (16:9)	864	480	56
SVGA	800	600	56
QHD	960	540	56
XGA	1024	768	56
720p HD	1280	720	56
4VGA	1280	960	56
SXGA	1280	1024	56
525 16SIF	1408	960	56
16CIF	1408	1152	56
4SVGA	1600	1200	56
1080 HD	1920	1080	56
2Kx1K	2048	1024	56
2Kx1080	2048	1080	56
4XGA	2048	1536	120
16VGA	2560	1920	120
3616x1536 (2. 35:1)	3616	1536	120
3672x1536 (2. 39:1)	3680	1536	120
3840x2160 (4*HD)	3840	2160	120
4Kx2K	4096	2048	120
4096x2160	4096	2160	120
4096x2304 (16:9)	4096	2304	120
7680x4320	7680	4320	248
8192x4096	8192	4096	248
8192x4320	8192	4320	248

[図21]

図21



[図22]

図22

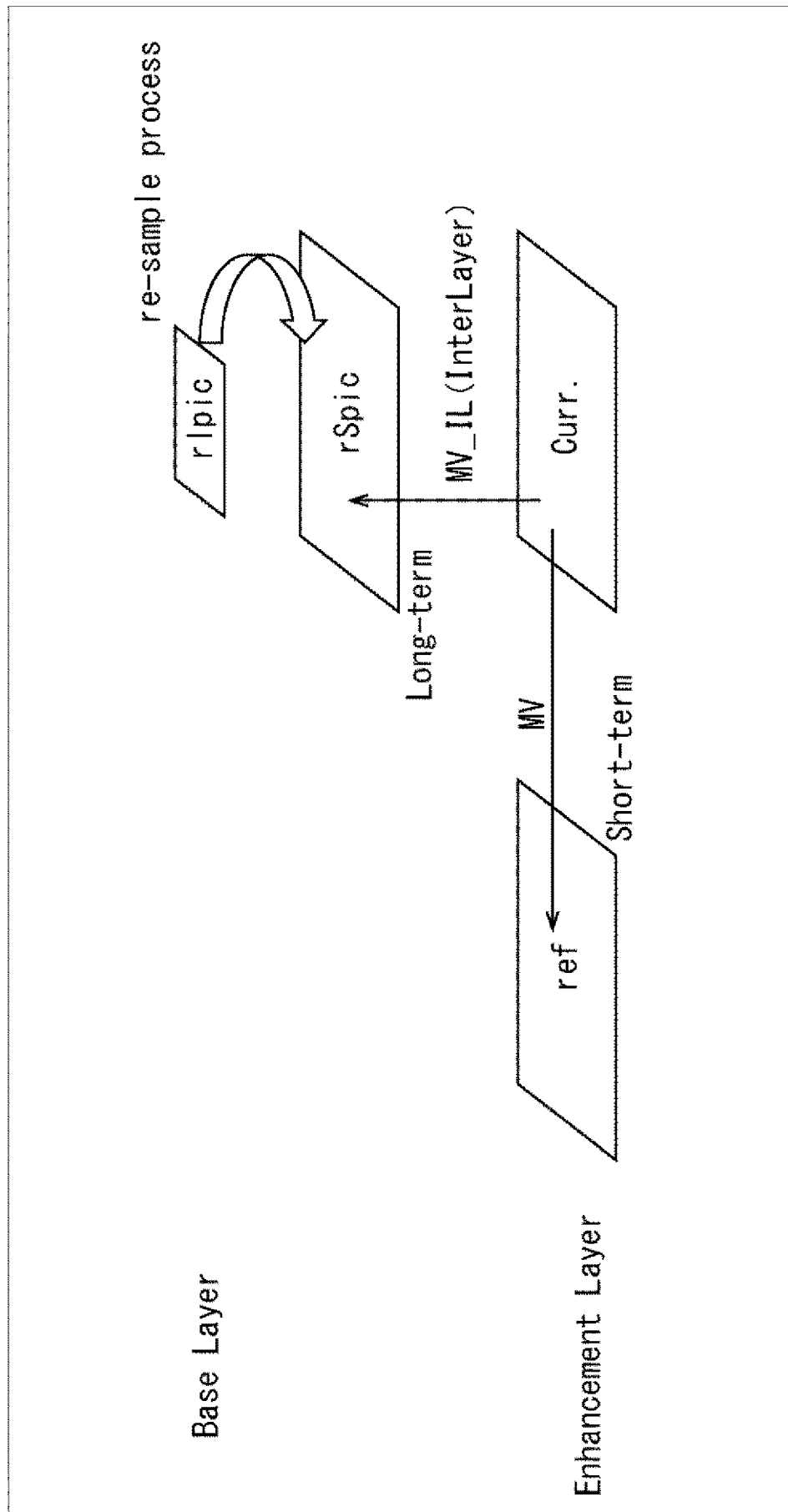
Table A—dv_constraint_value

Level	Max luma height	dv_constraint_value
1	144	56
2	288	56
2.1	360	56
3	540	56
3.1	720	56
4	1080	56
4.1	1080	56
5	2160	120
5.1	2160	120
5.2	2160	120
6	4320	248
6.1	4320	248
6.2	4320	248

Semantics
disparity_vector_constraint_flag equal to 1 specifies that disparity vector is constrained in the CVS. When disparity_vector_constraint_flag is equal to 1, the vertical component of the disparity vector shall be equal to or less than dv_constraint_value in pixel. The variable dv_constraint_value is specified in Table A. When disparity_vector_constraint_flag is equal to 0, there is no constraint for disparity_vector_length. When not present, the value is inferred to be 0.

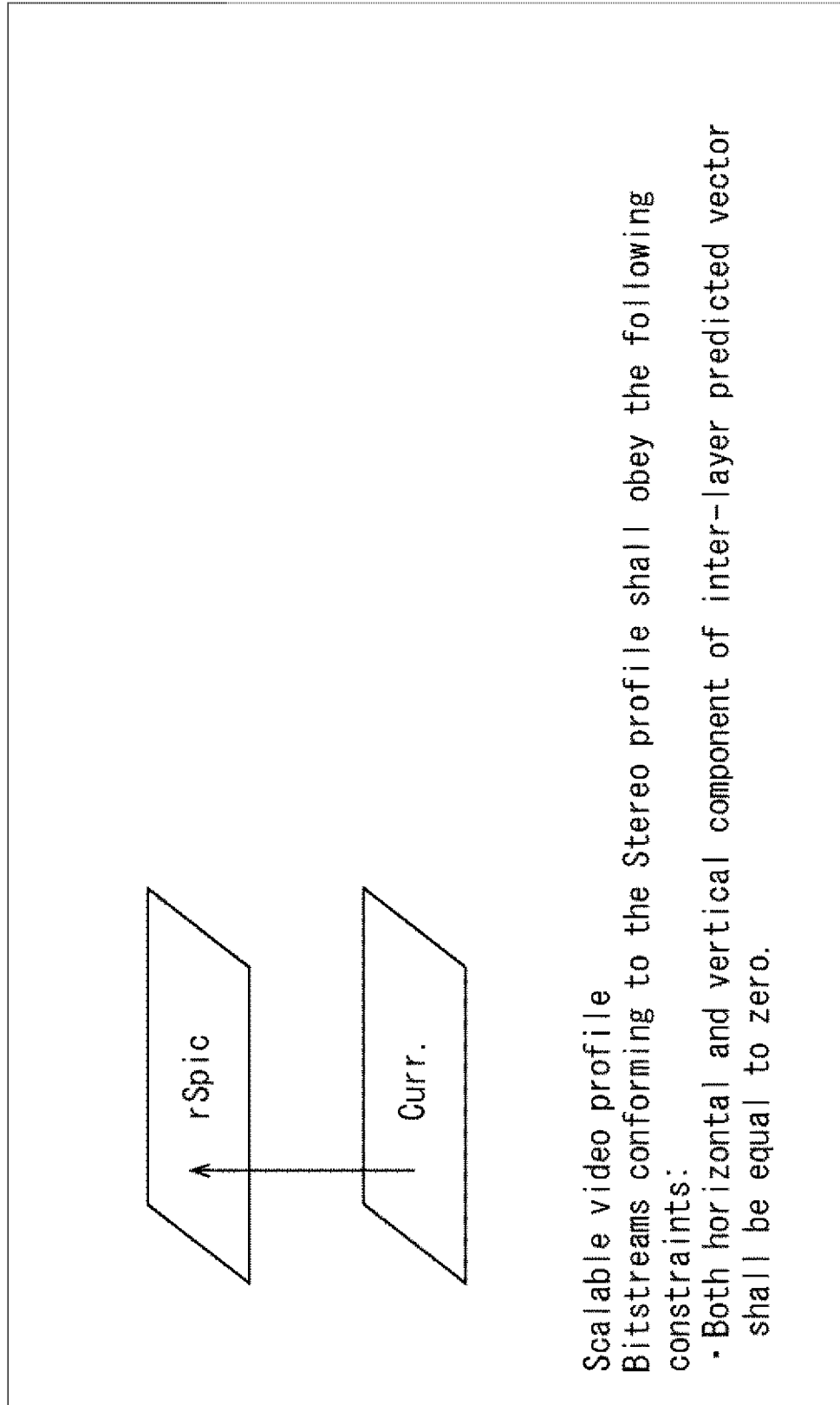
[図23]

図23



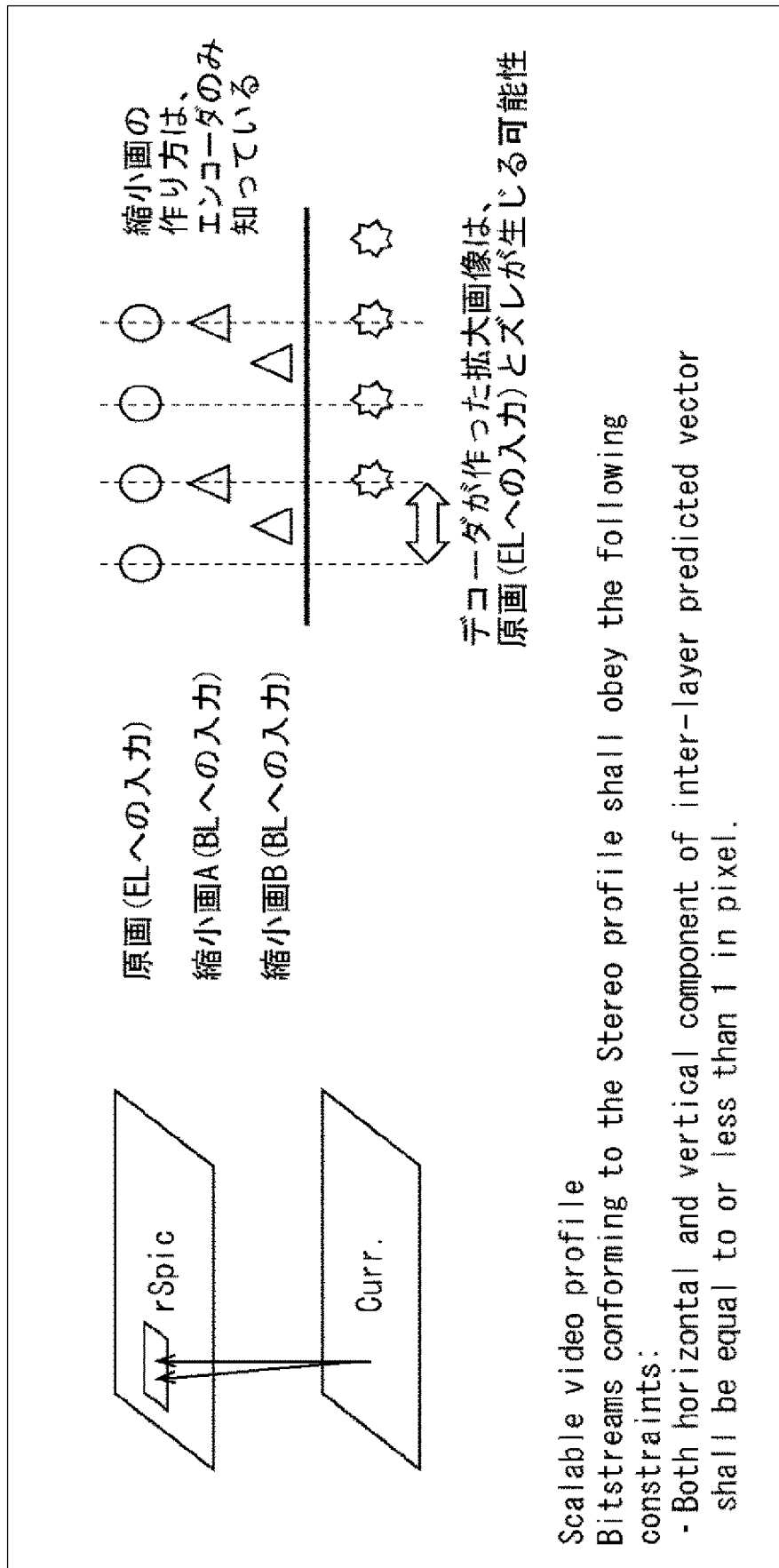
[図24]

図24



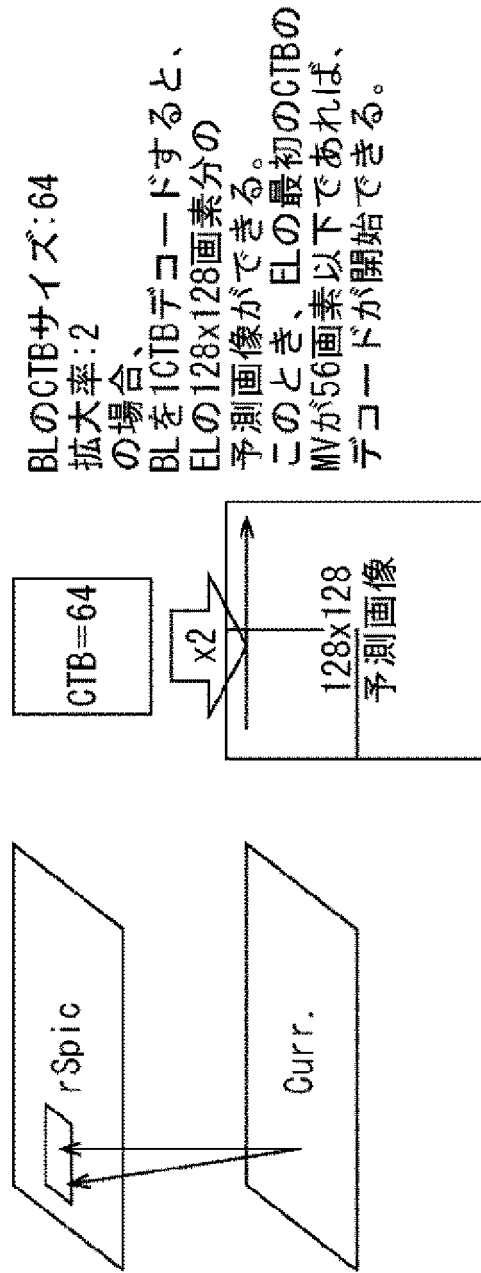
[図25]

図25



[図26]

図26



Scalable video profile

Bitstreams conforming to the Stereo profile shall obey the following constraints:

- Both horizontal and vertical component of inter-layer predicted vector shall be equal to or less than the `il_pred_constraint` in pixel. The variable `il_pred_constraint` is specified as follows.

$$\bullet \text{ il_pred_constraint} = (\text{scale_factor} * \text{BL_CTBsize} - \text{EL_CTBsize}) - 8$$

$$\text{Ex. il_pred_constraint} = (2 * 64 - 64) - 8 = 56 [\text{pixel}]$$

[図27]

図27

Syntax

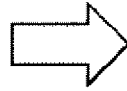
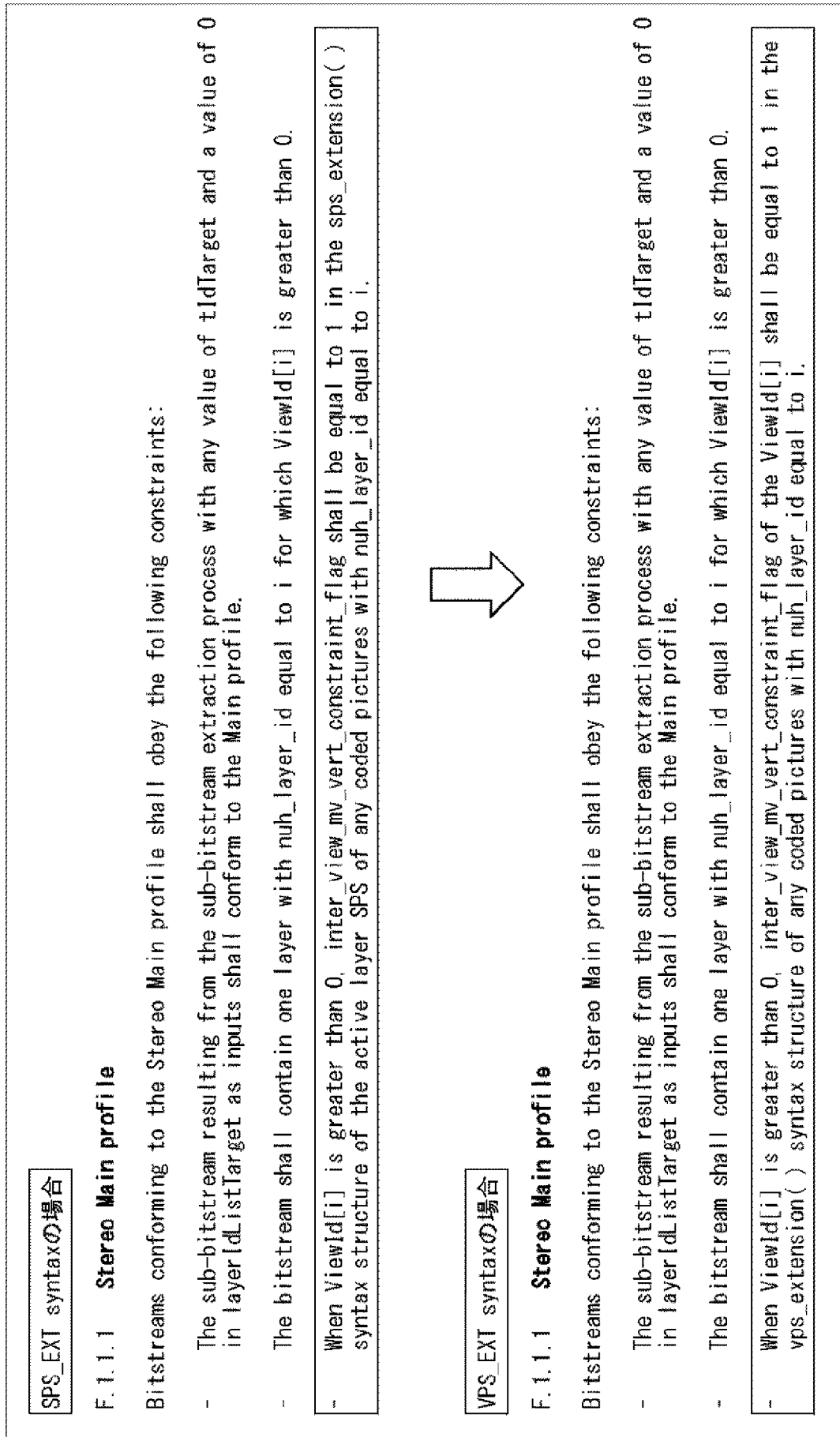
	Descriptor
vps_extension() {	
for (i=1; i <= vps_max_layers_minus1; i++)	
inter_view_mv_vert_constraint_flag[i]	u(1)
}	

Semantics

inter_view_mv_vert_constraint_flag[i] specifies the value of the inter_view_mv_vert_constraint_flag syntax element in VCL NAL units of the i-th layer. For i in a range from 1 to vps_max_layers_minus1, inclusive, when not present, the value of inter_view_mv_vert_constraint_flag [i] is inferred to be equal to 0. inter_view_mv_vert_constraint_flag equal to 1 specifies that vertical component of motion vectors used for inter-layer prediction are constrained in the CVS. When inter_view_mv_vert_constraint_flag is equal to 1, the vertical component of the motion vectors used for inter-layer prediction shall be equal to or less than 56 in units of luma samples. When inter_view_mv_vert_constraint_flag is equal to 0, no constraint for of the vertical component of the motion vectors used for inter-layer prediction is signalled by this flag.

[図28]

図28

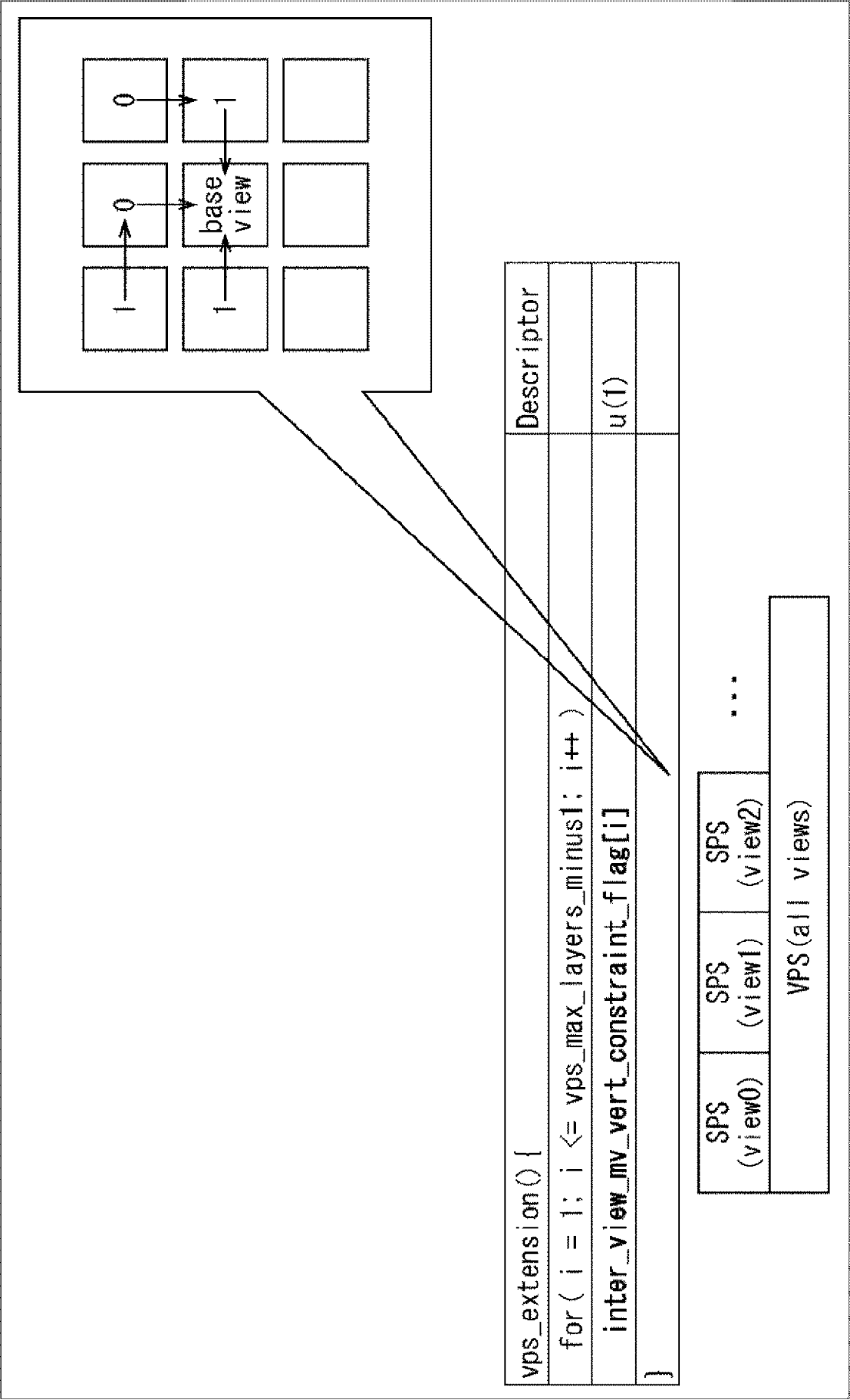


[図29]
図29

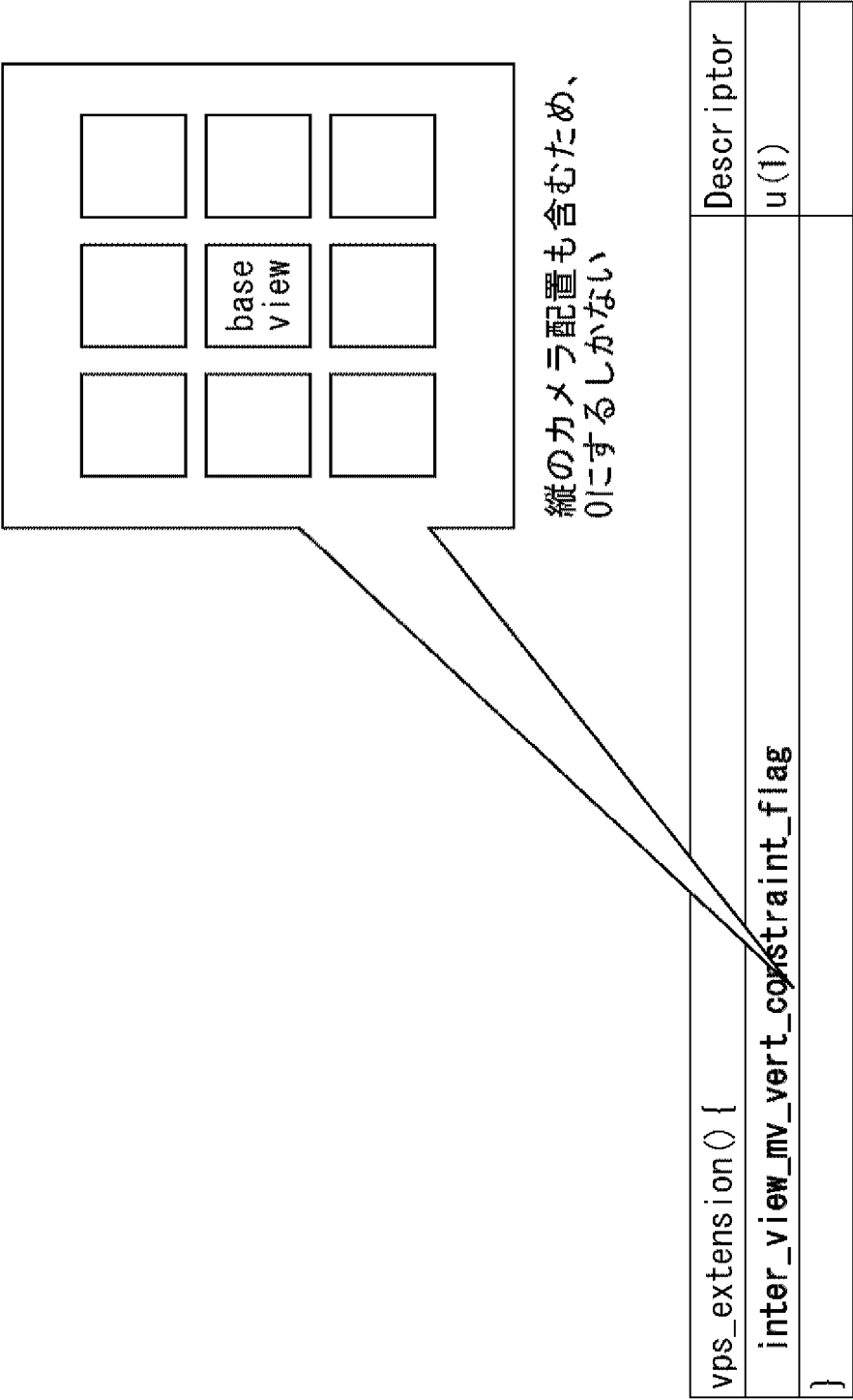
SPS_EXTの場合と同じ点	SPS_EXTの場合と異なる点
視点毎に符号化できるため、 bitstream levelのトランスコードが可能	VPSはSPSより高位のシンタクスであるため、 Multi-viewの場合は、より早く各視点における bitstream制約がわかる。そのため、デコーダコア の負荷分散が容易。 変形例として、3Dプロファイルの場合だけフラグを送るというSyntaxにした場合に、その判断が容易。

[図30]

図30



[図31]
図31

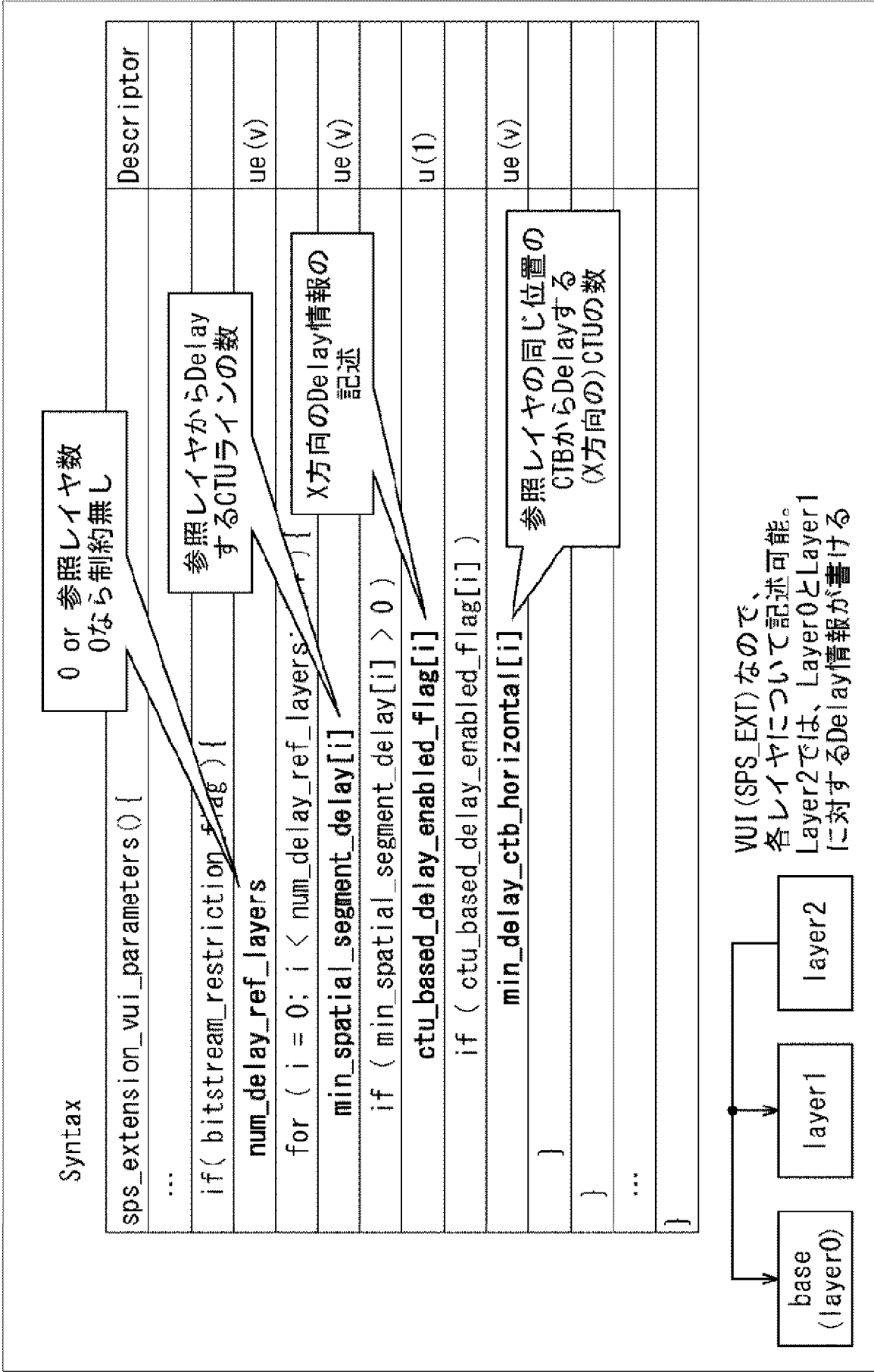


[図32]
図32

sps_extension_vui_parameters() {	Descriptor
if(bitstream_restriction_flag) {	
inter_view_mv_vert_constraint_flag	
}	u(1)
}	

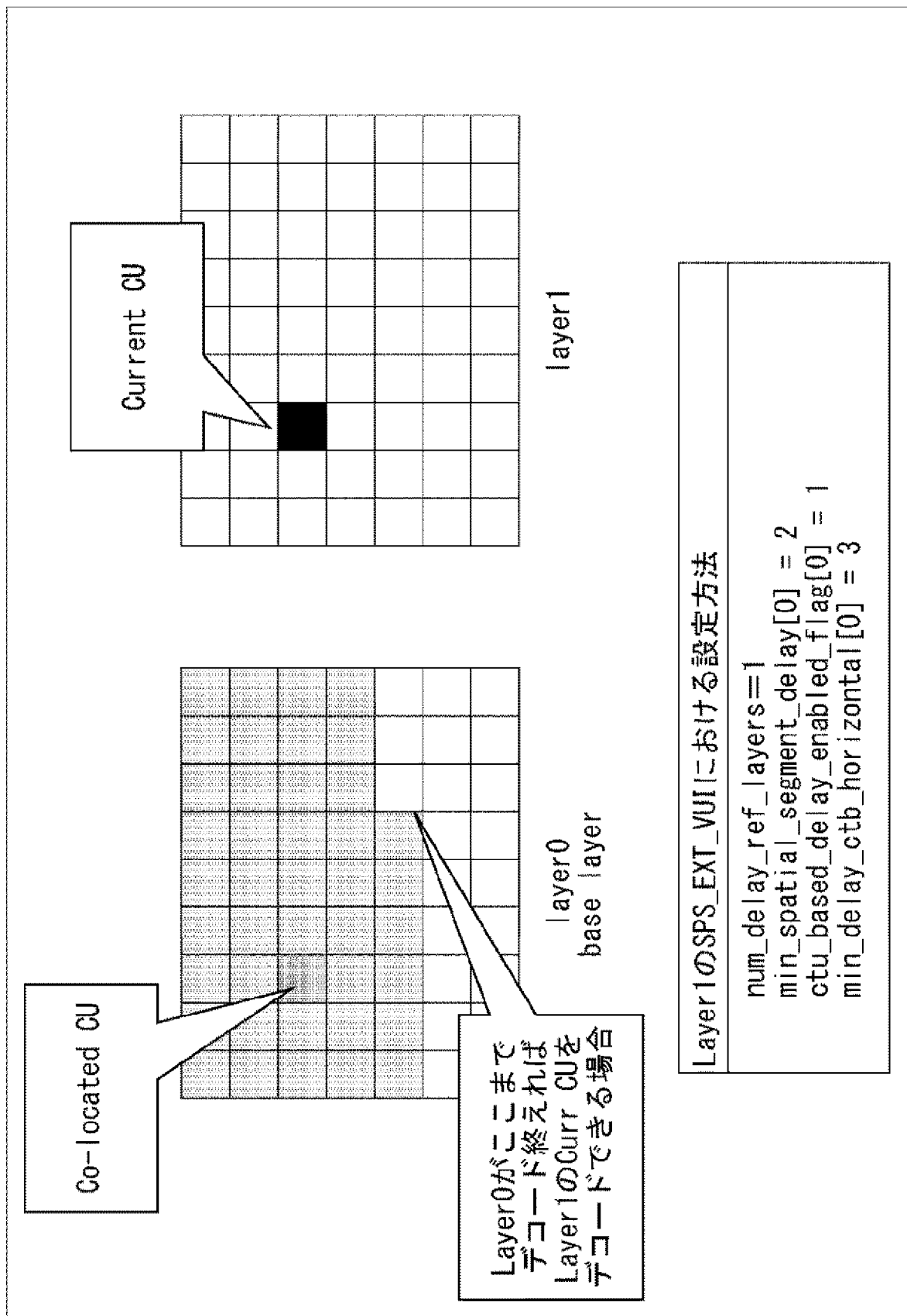
[図33]

図33



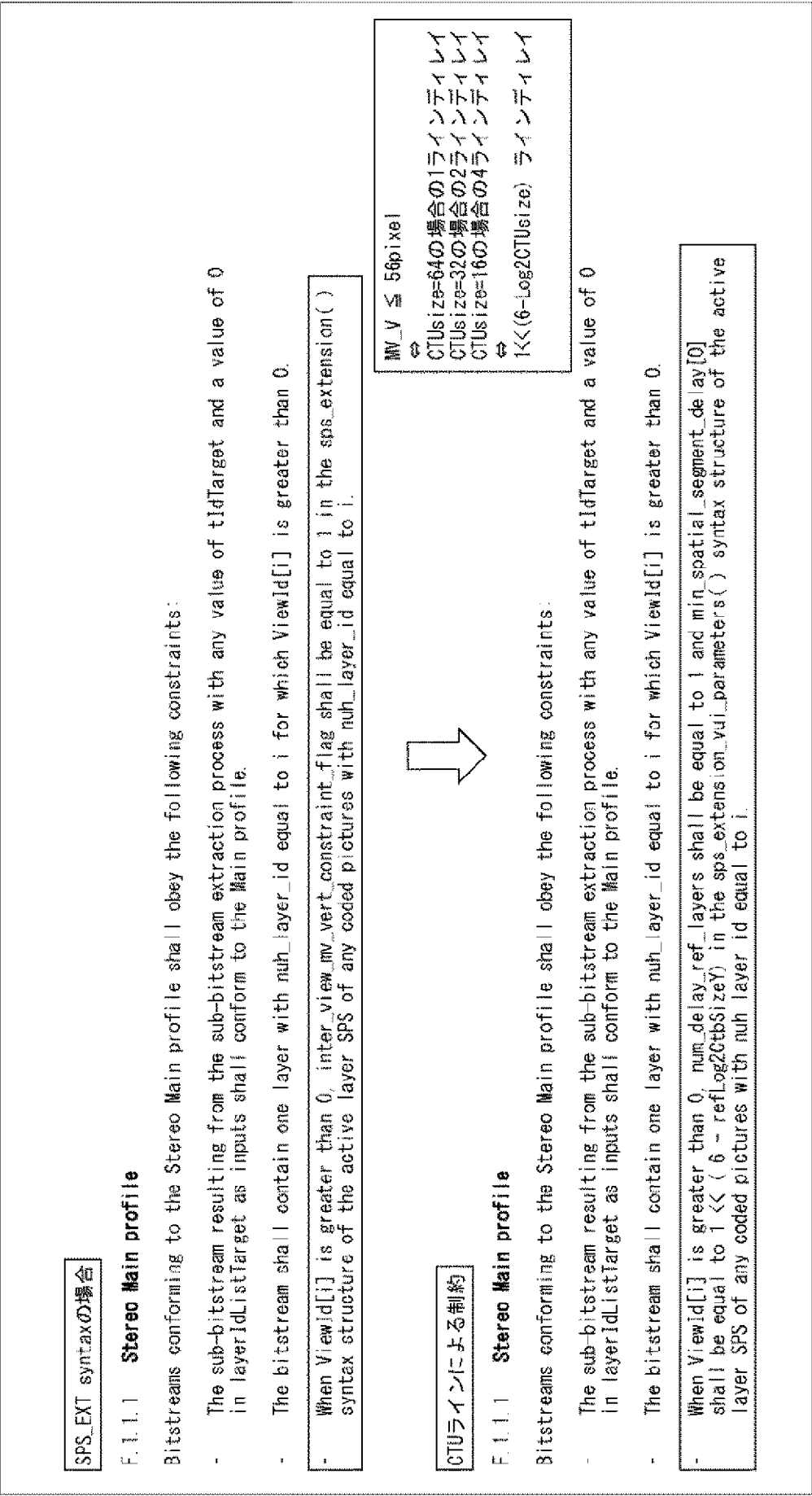
[図34]

図34



[図35]

図35



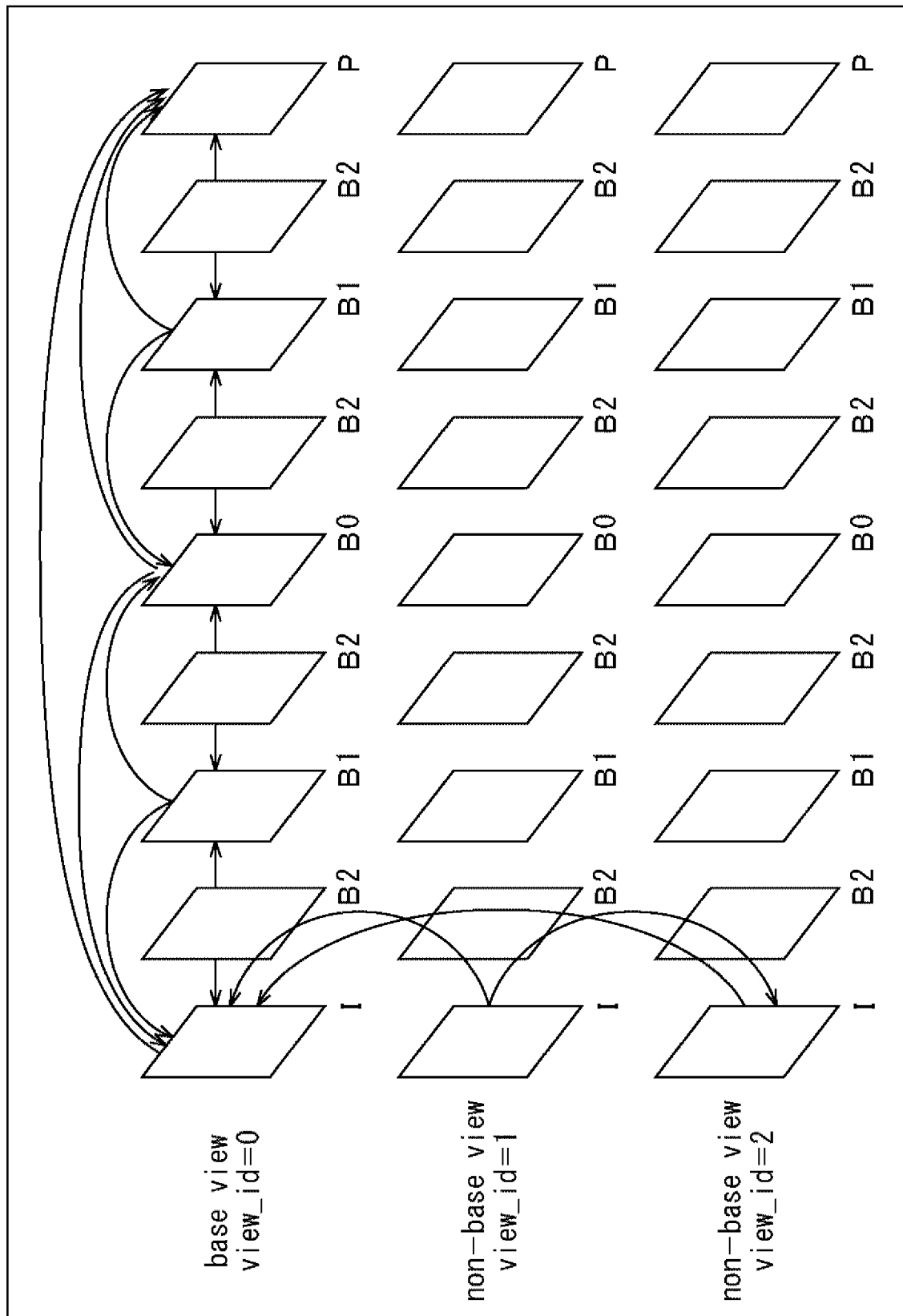
[図36]

図36

interview_vector_v_range_restrict_flagと同じ ディレイ情報としては同じ	interview_vector_v_range_restrict_flagと異なる点
	参照面におけるLoopフィルタの0n/0ff、また、Y方向の視差ベクトルが整数精度かどうかにより、 $MV_V \leq 56$という制約が変更になる ・ Loop filterオフの場合、$MV_V \leq 60$ (=64-MCフィルタのオフセットの4) pixelまでMVを伸ばせる ・ MV長が整数の場合、MCフィルタが不要なので、$MV_V \leq 60$ (=64-Loopフィルタのオフセットの4) までMVを伸ばせる ・ Loop filterオフ & MV長が整数の場合、$MV_V \leq 64$ までMVを伸ばせる

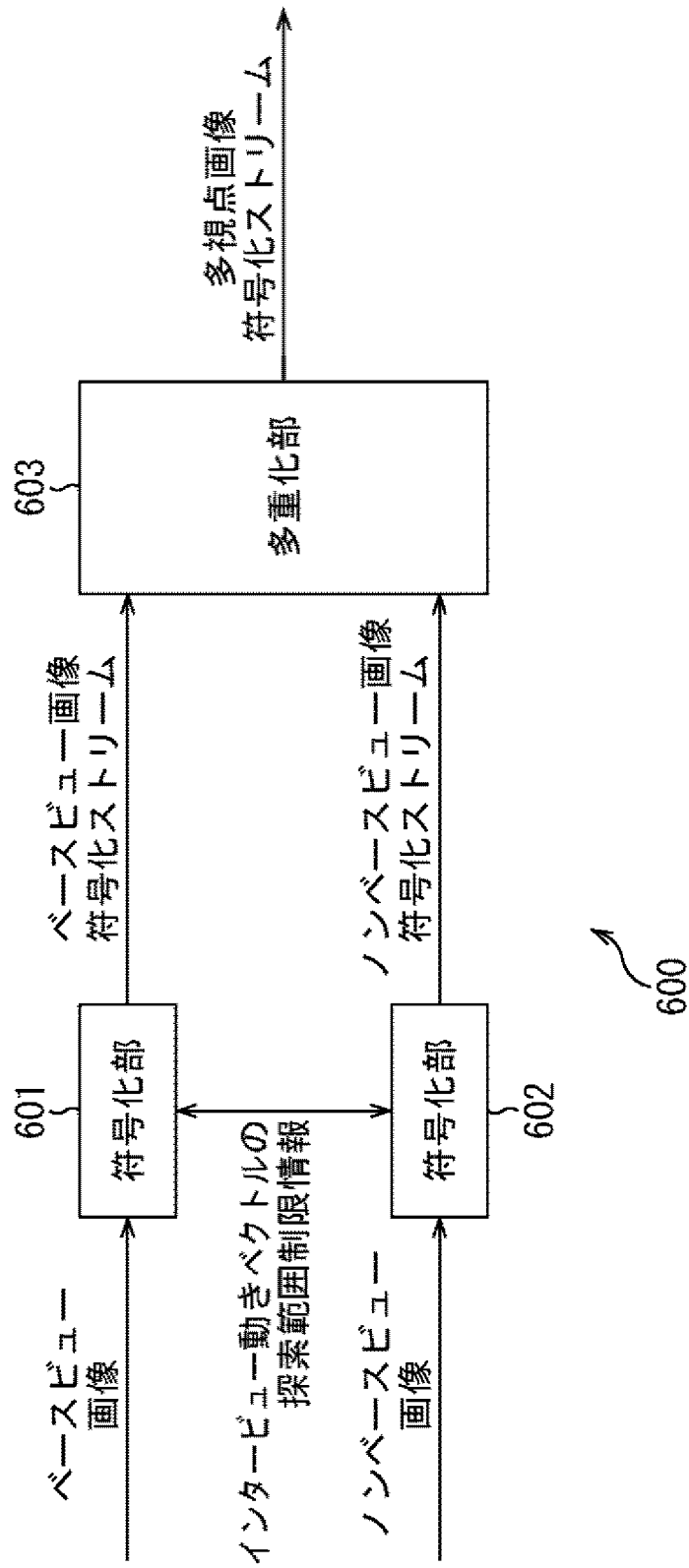
[図37]

図37



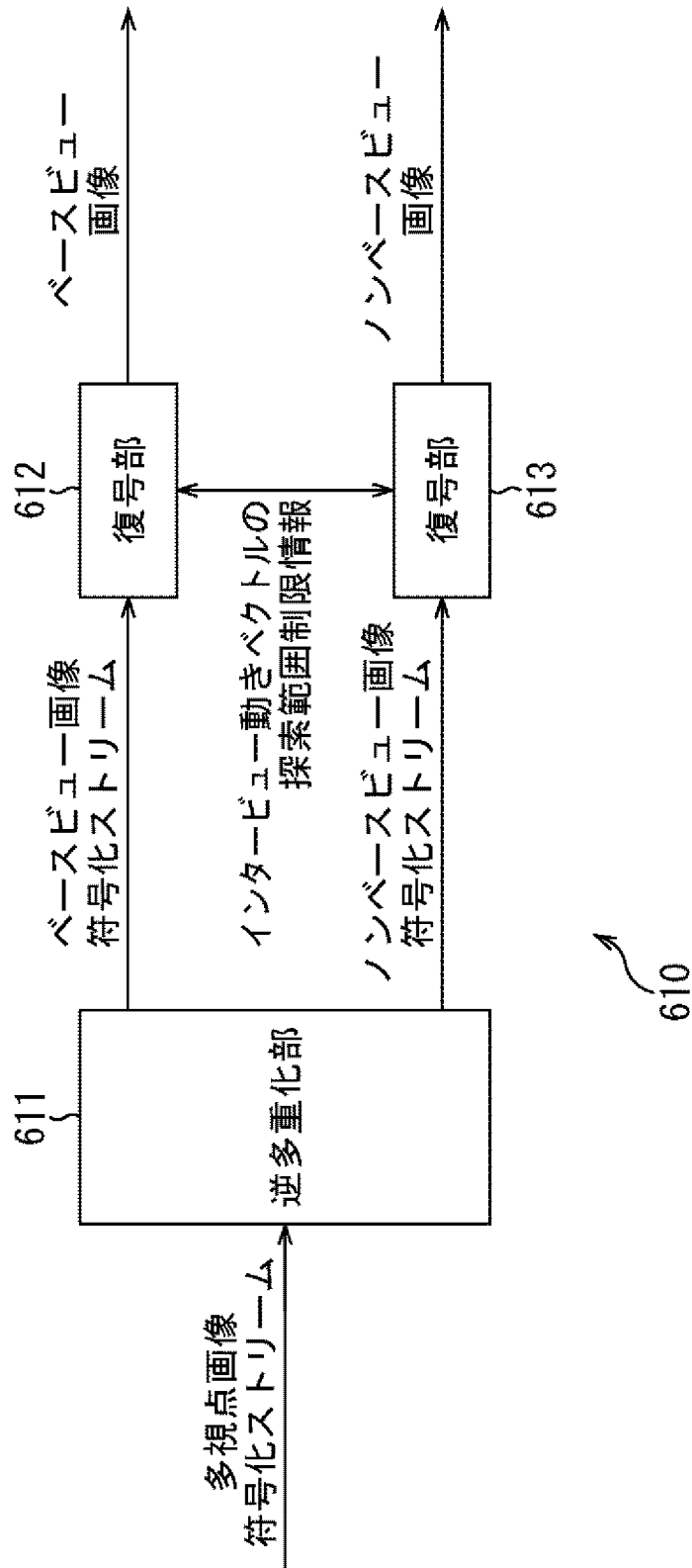
[図38]

図38



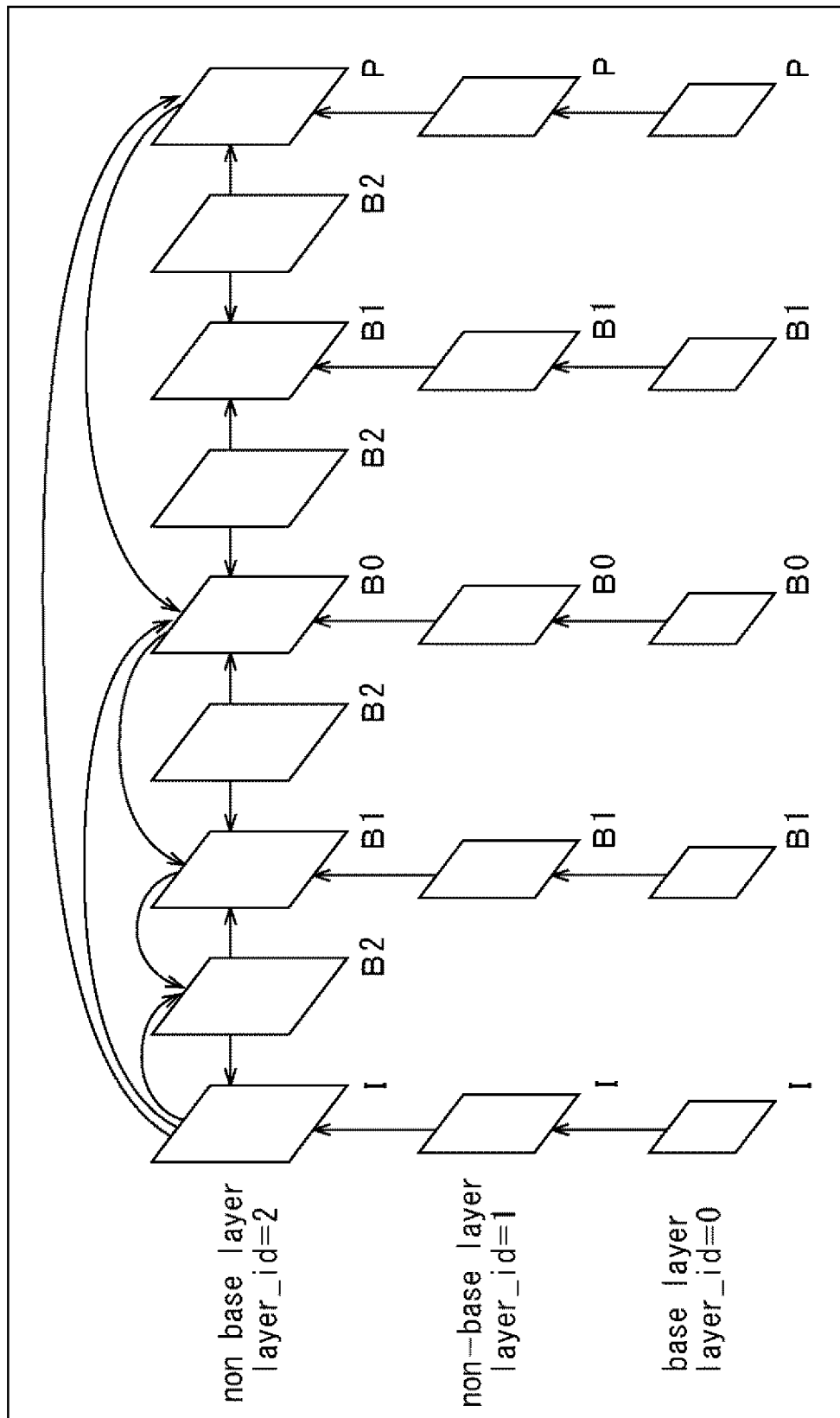
[図39]

図39



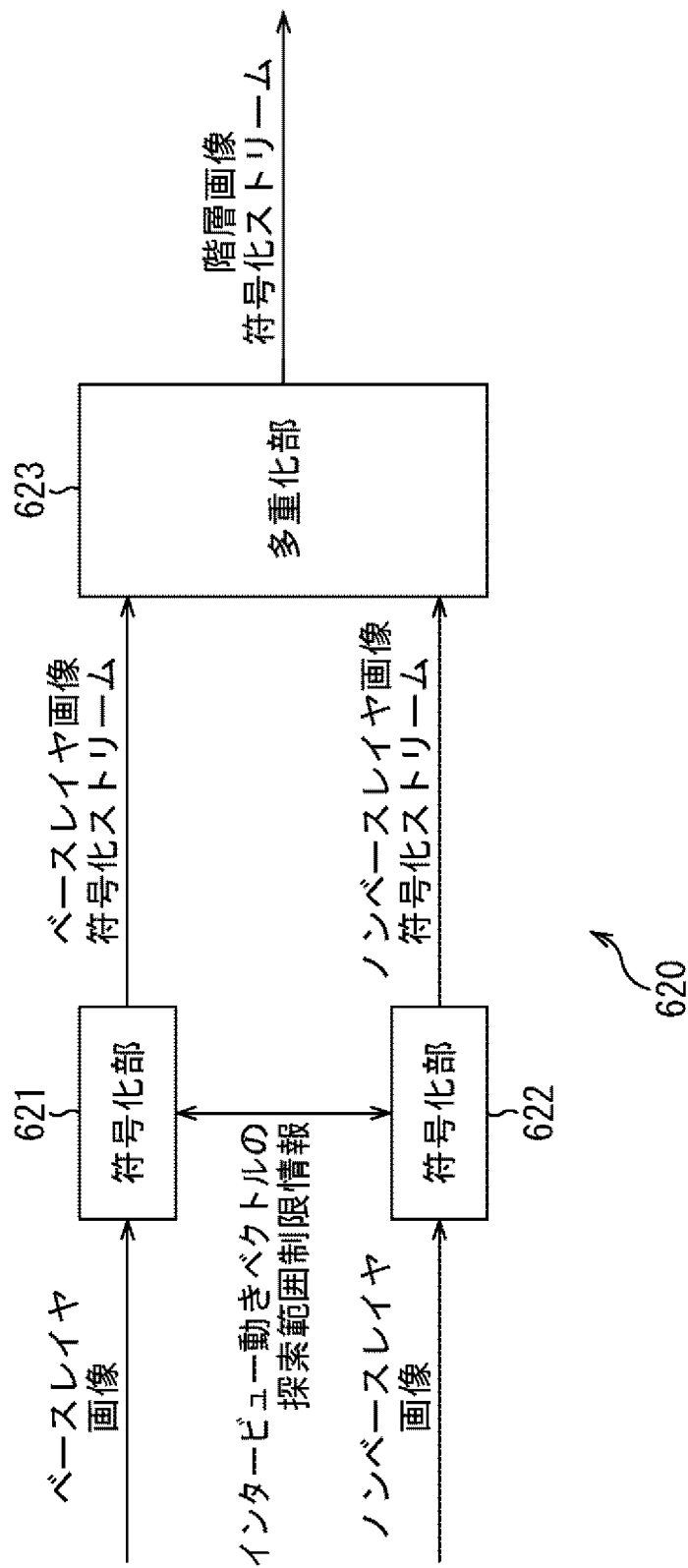
[図40]

図40



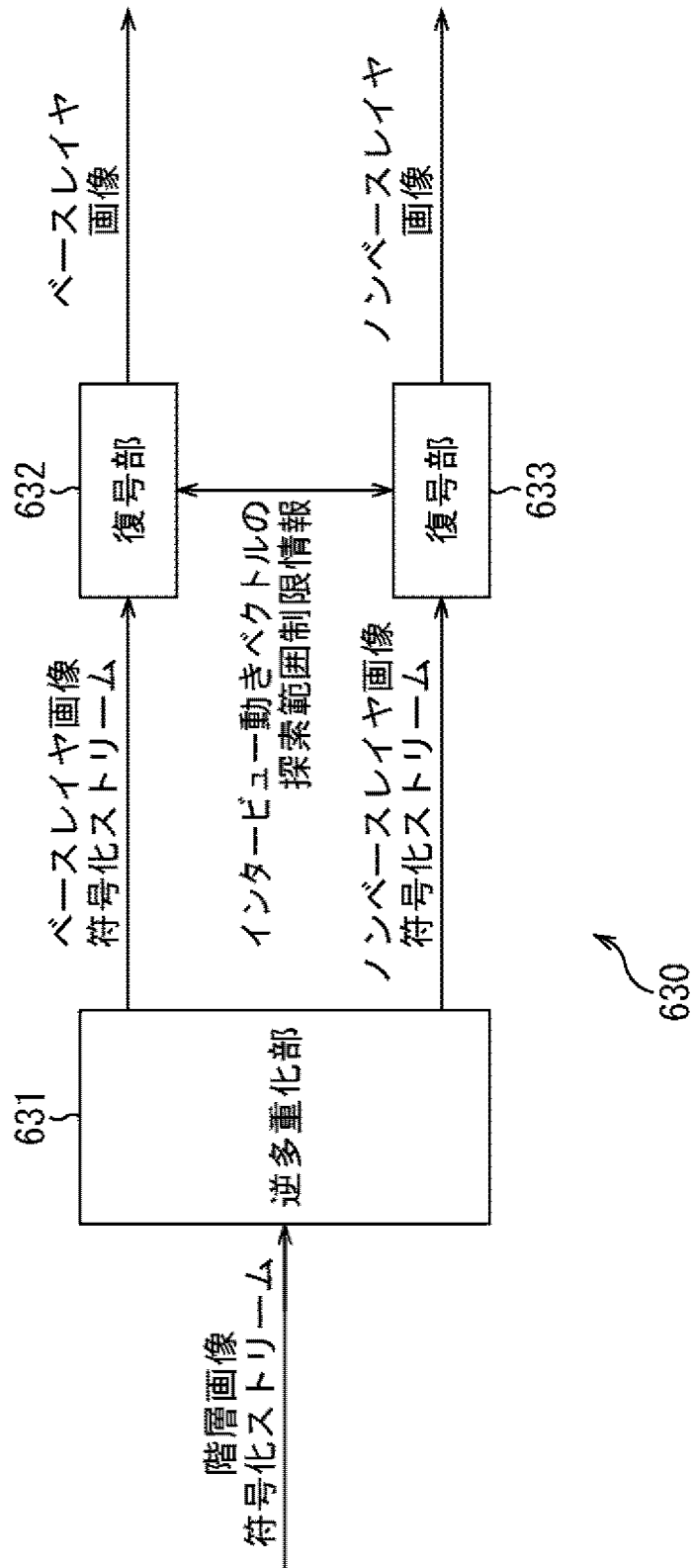
[図41]

図41



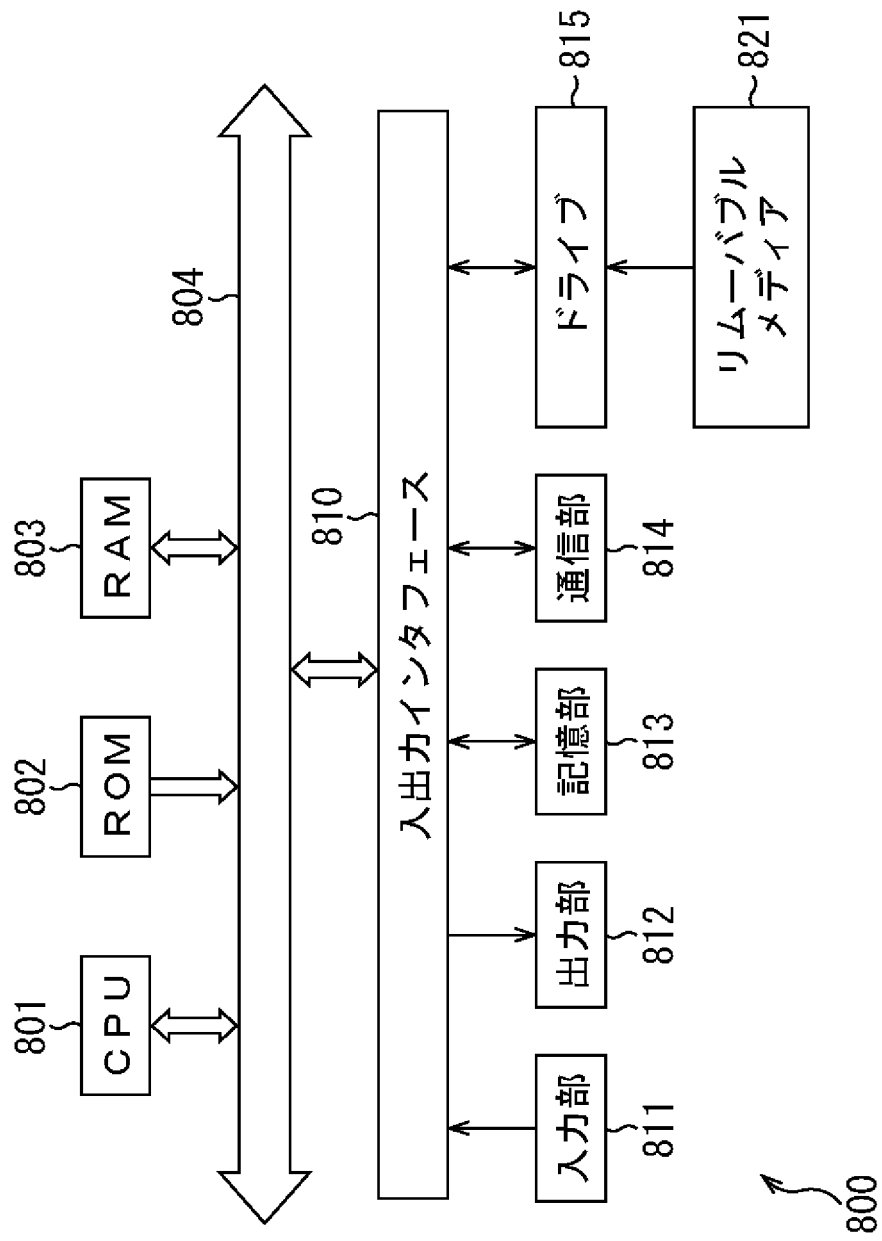
[図42]

図42



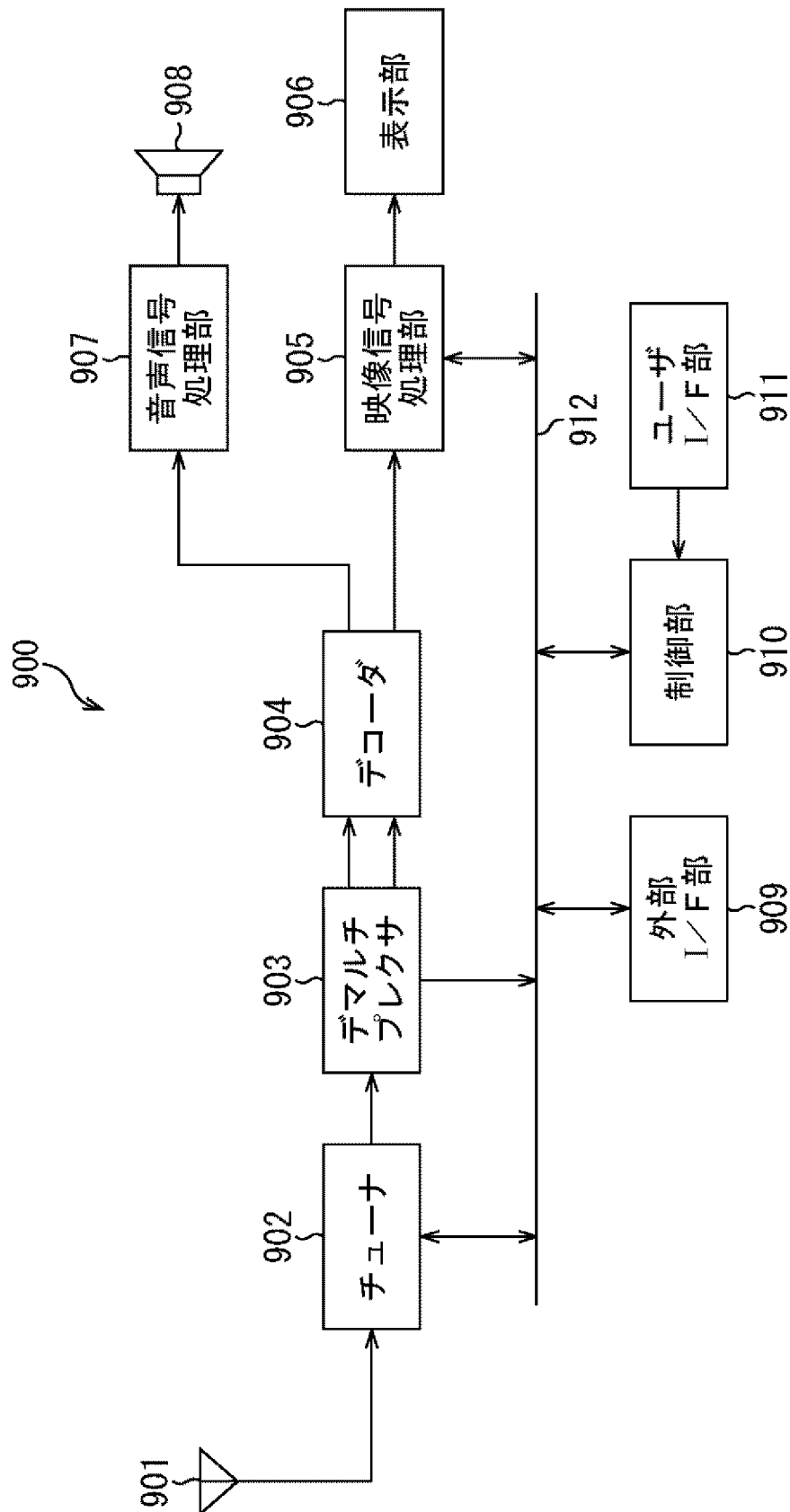
[図43]

図43



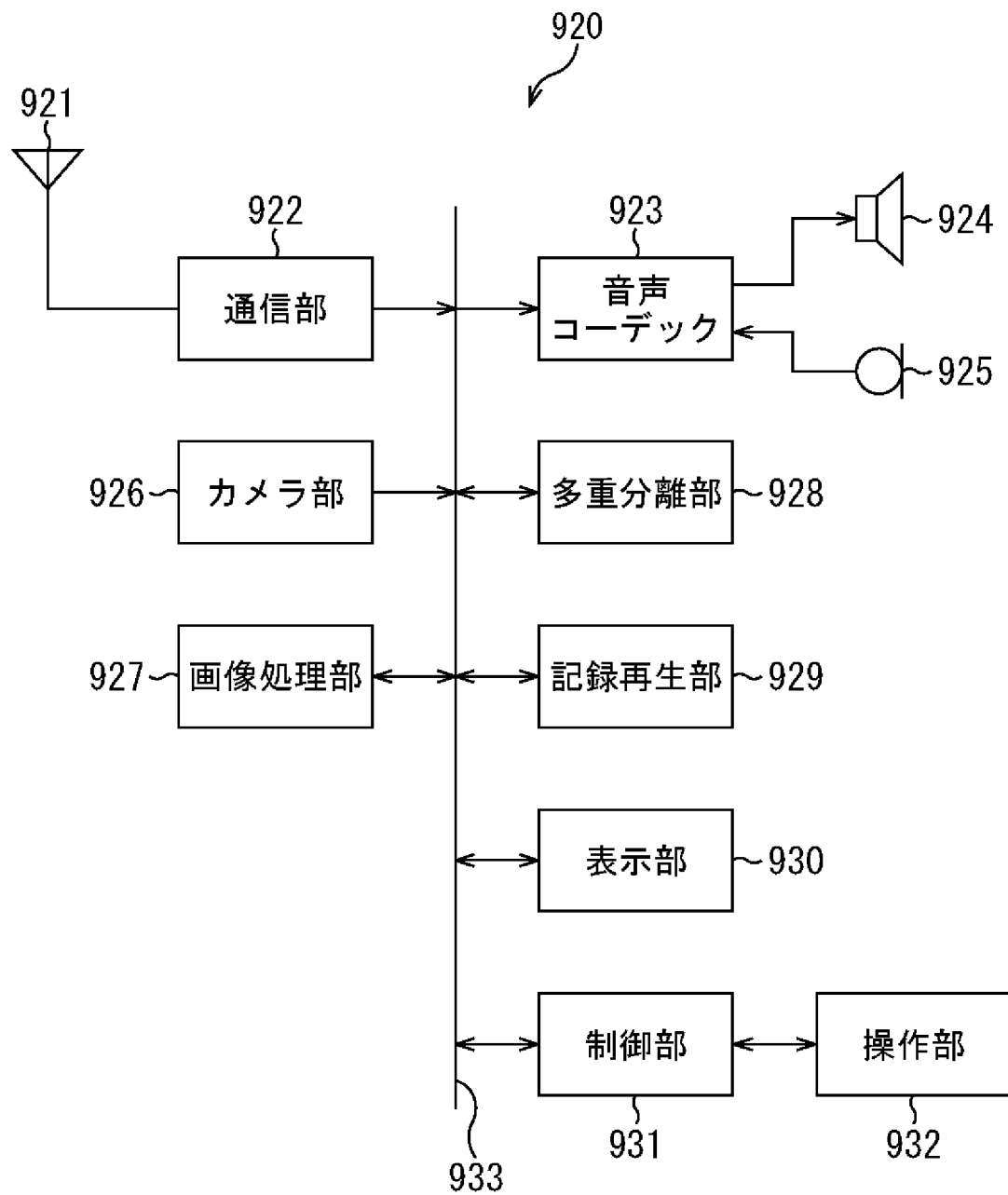
[図44]

図44



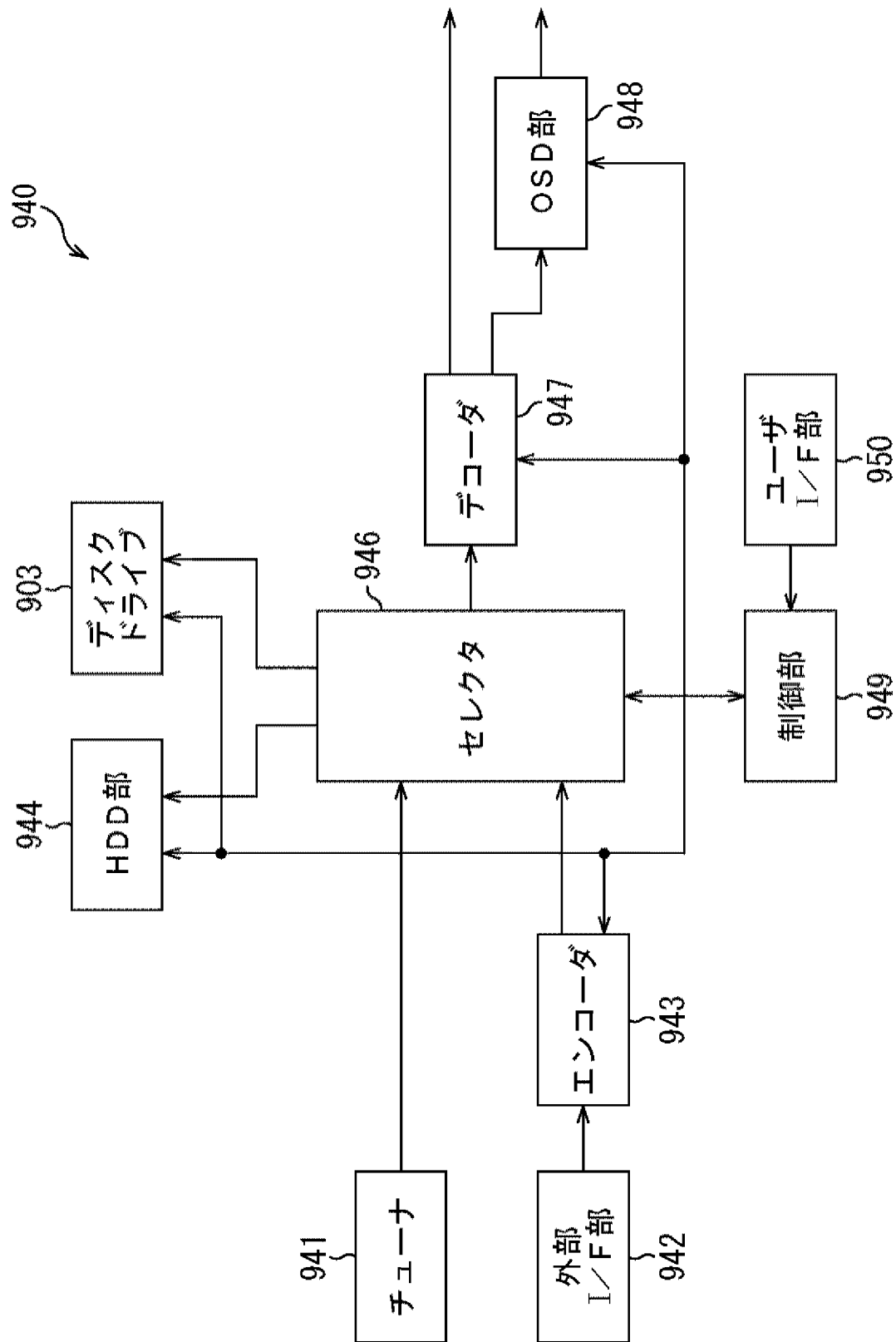
[図45]

図45



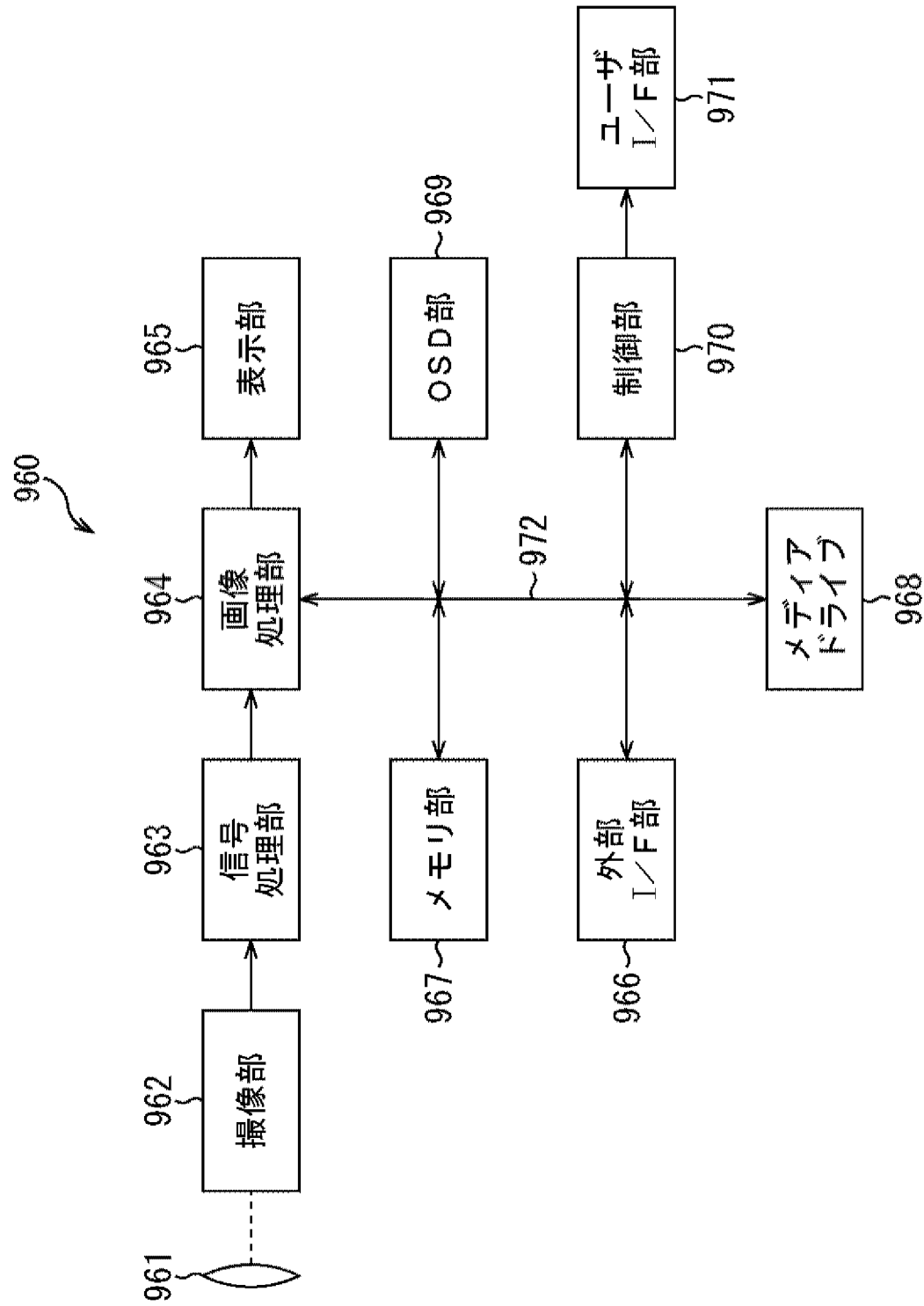
[図46]

図46



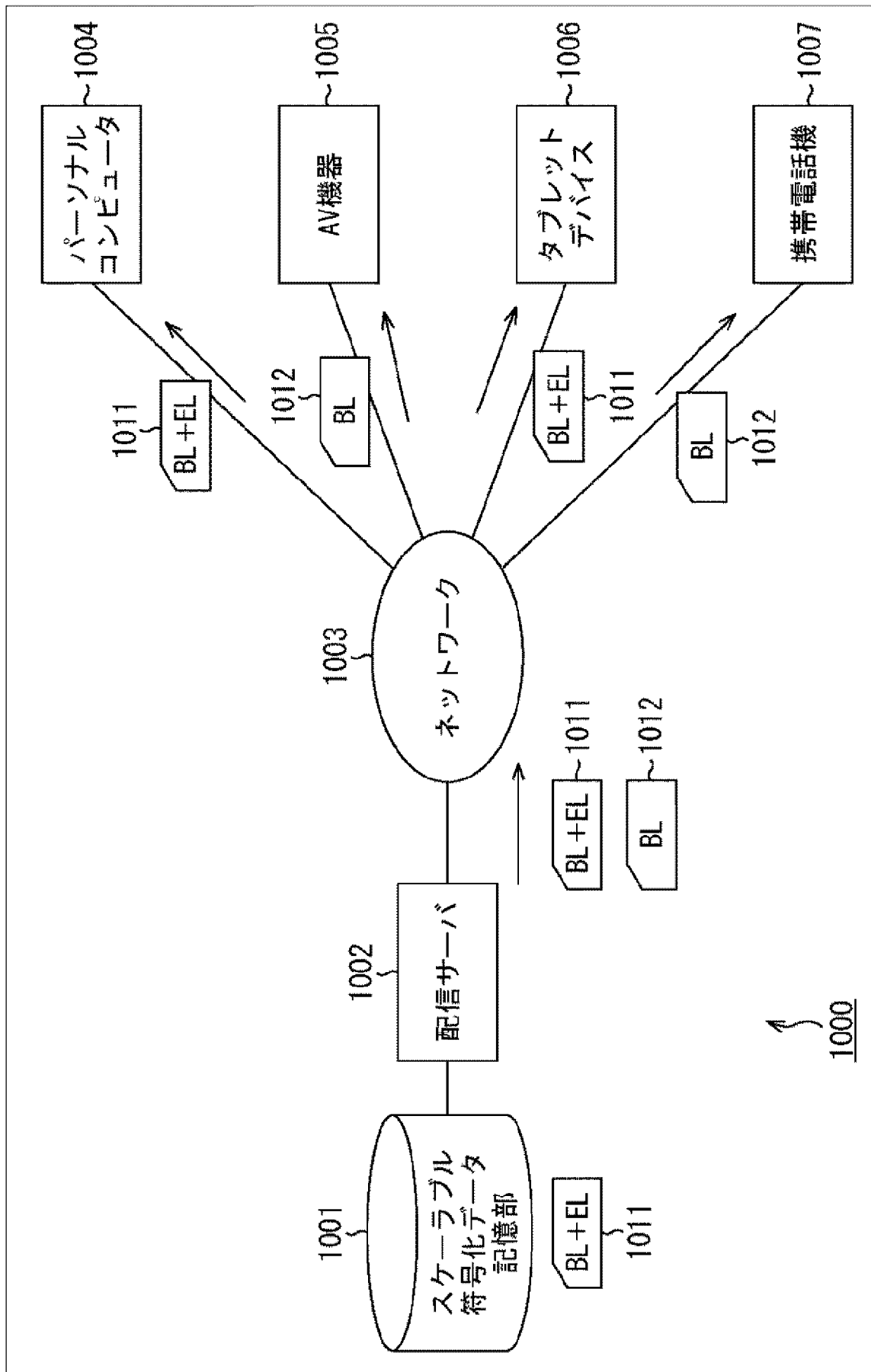
[図47]

図47



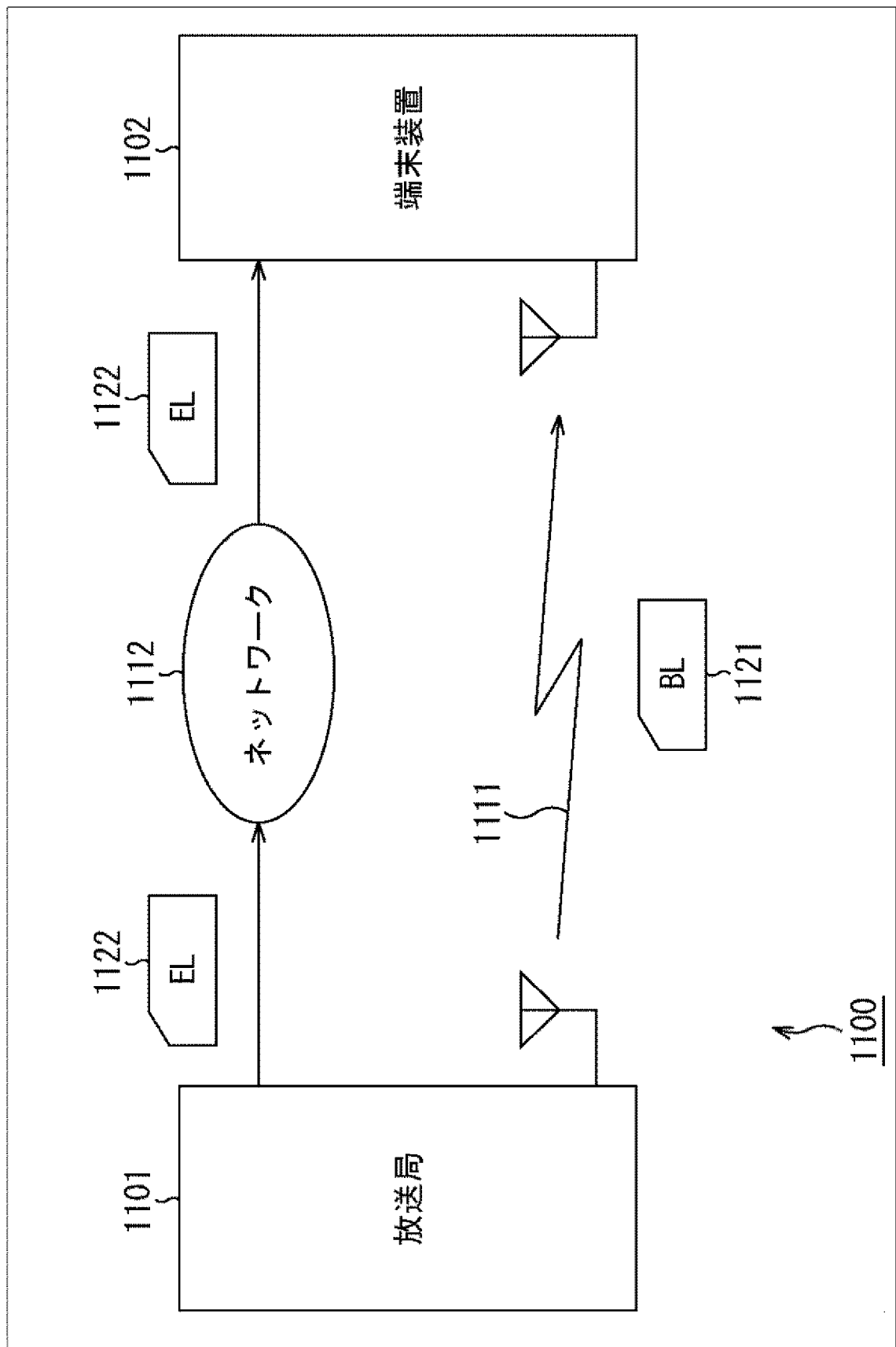
[図48]

図48



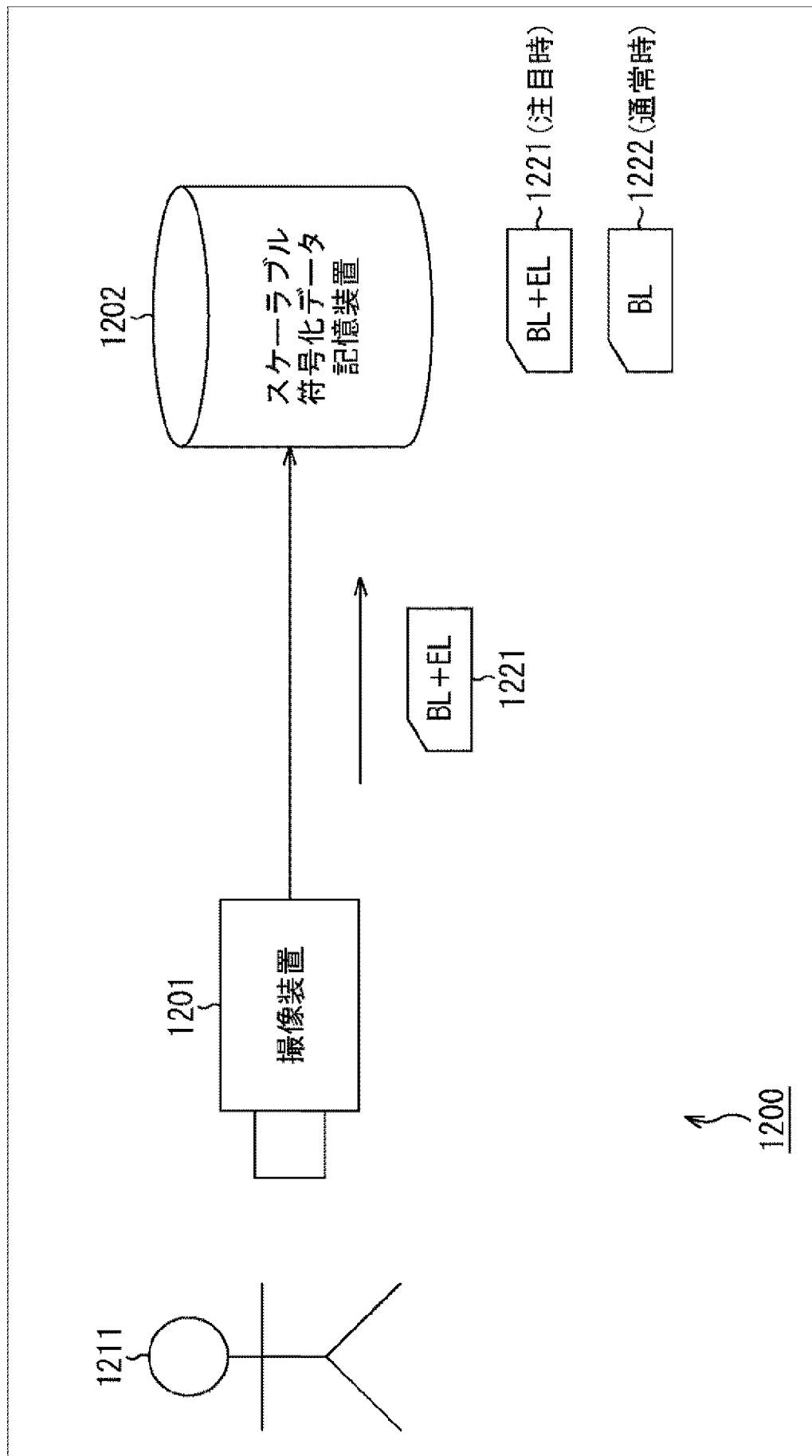
[図49]

図49



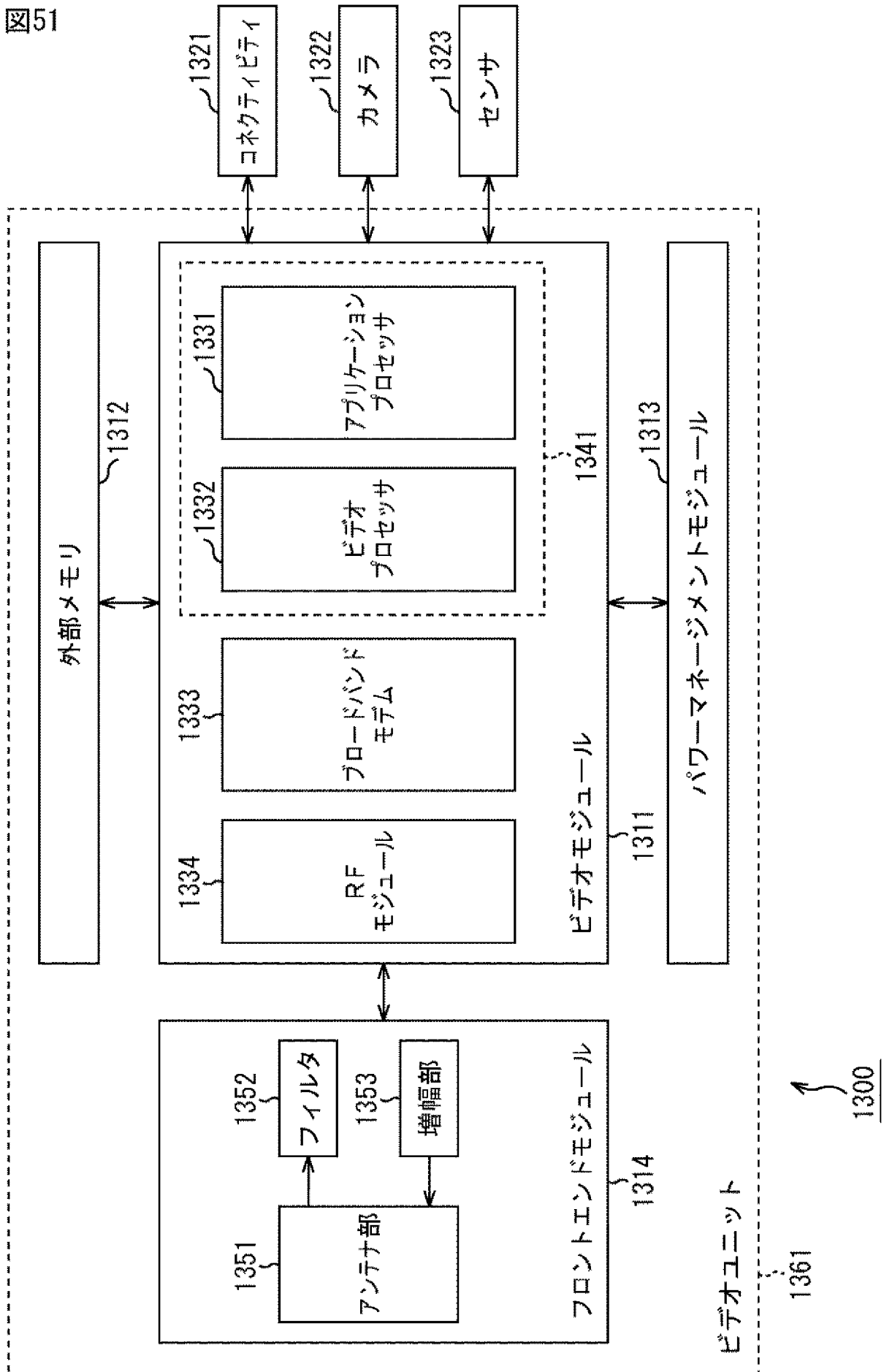
[図50]

図50



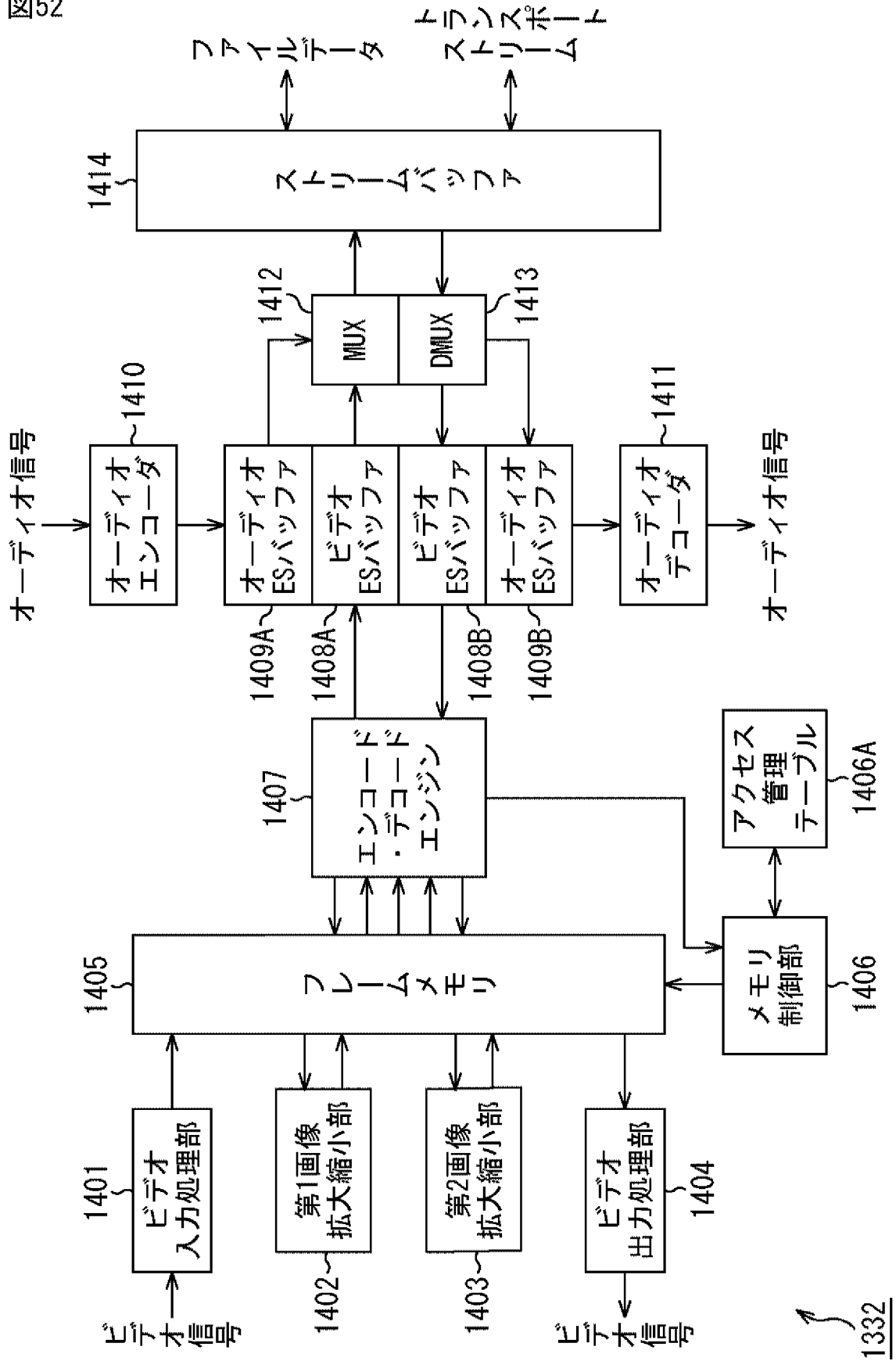
[図51]

図51



[図52]

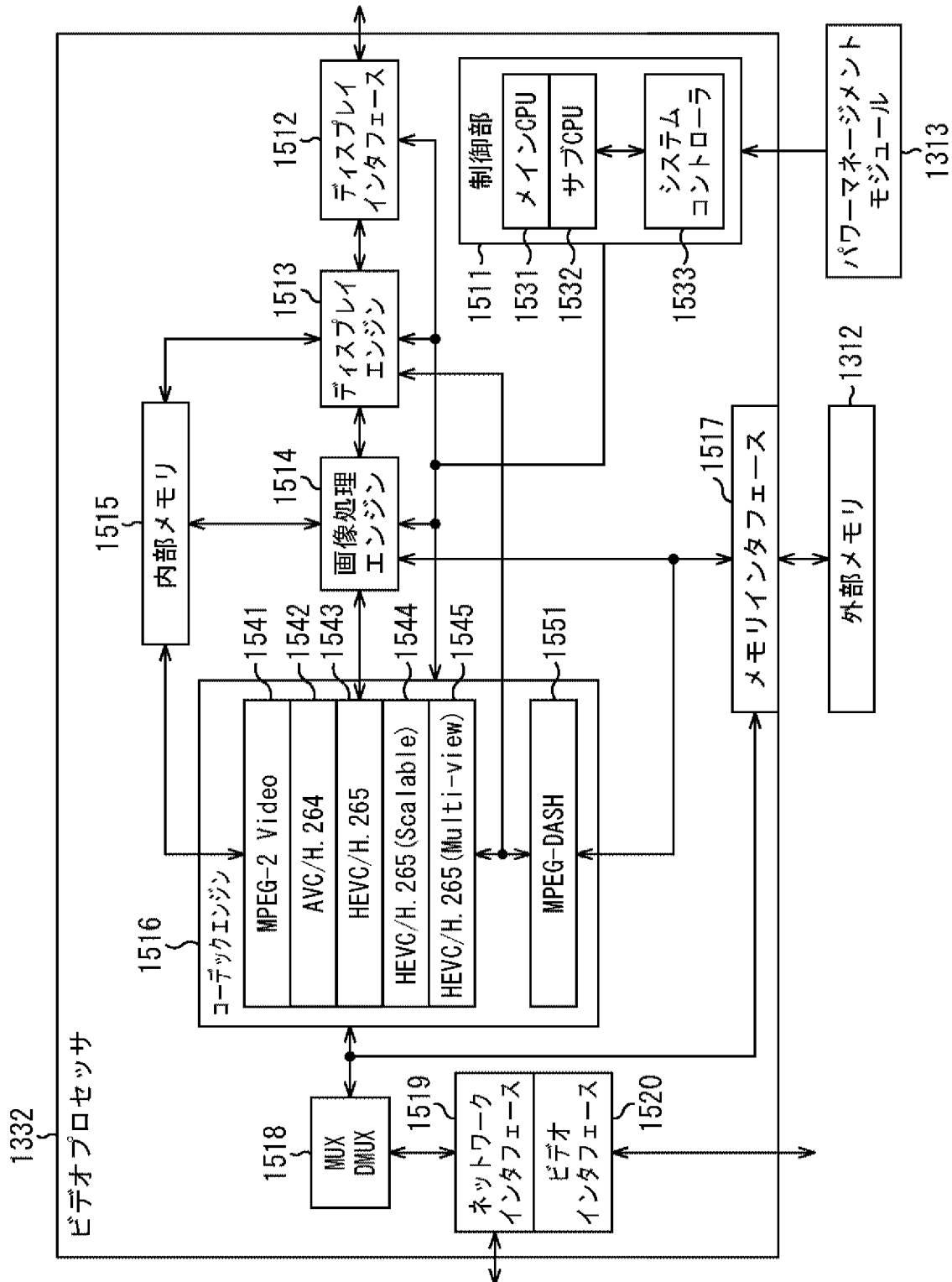
図52



1332

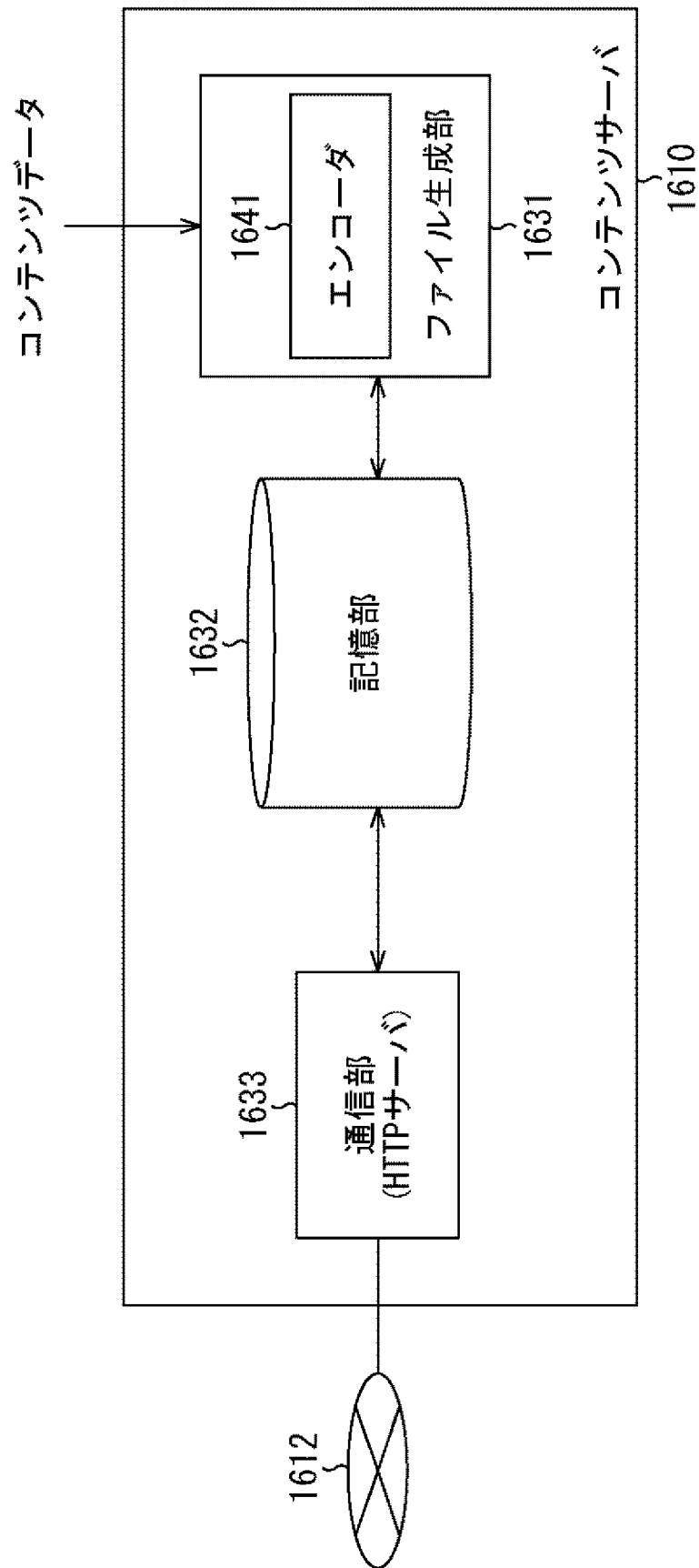
[図53]

図53



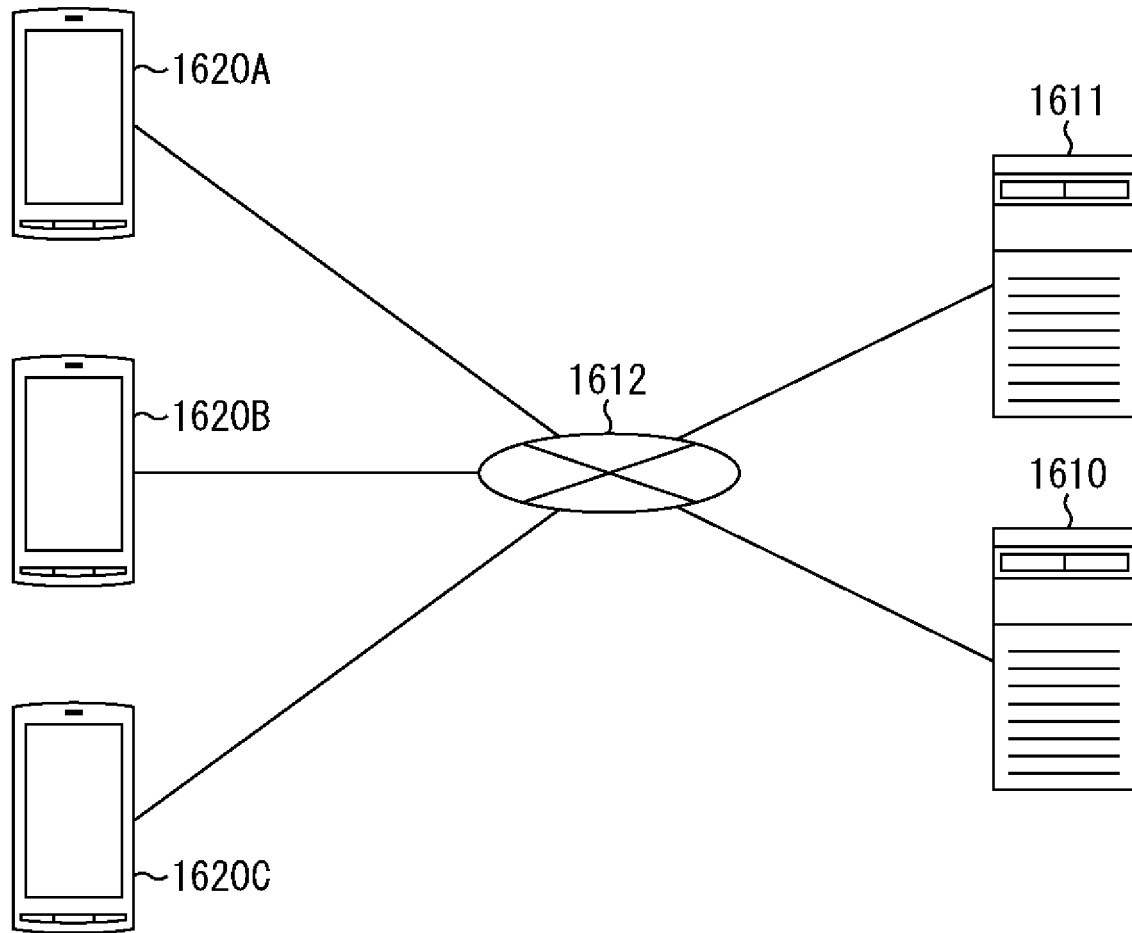
[図54]

図54



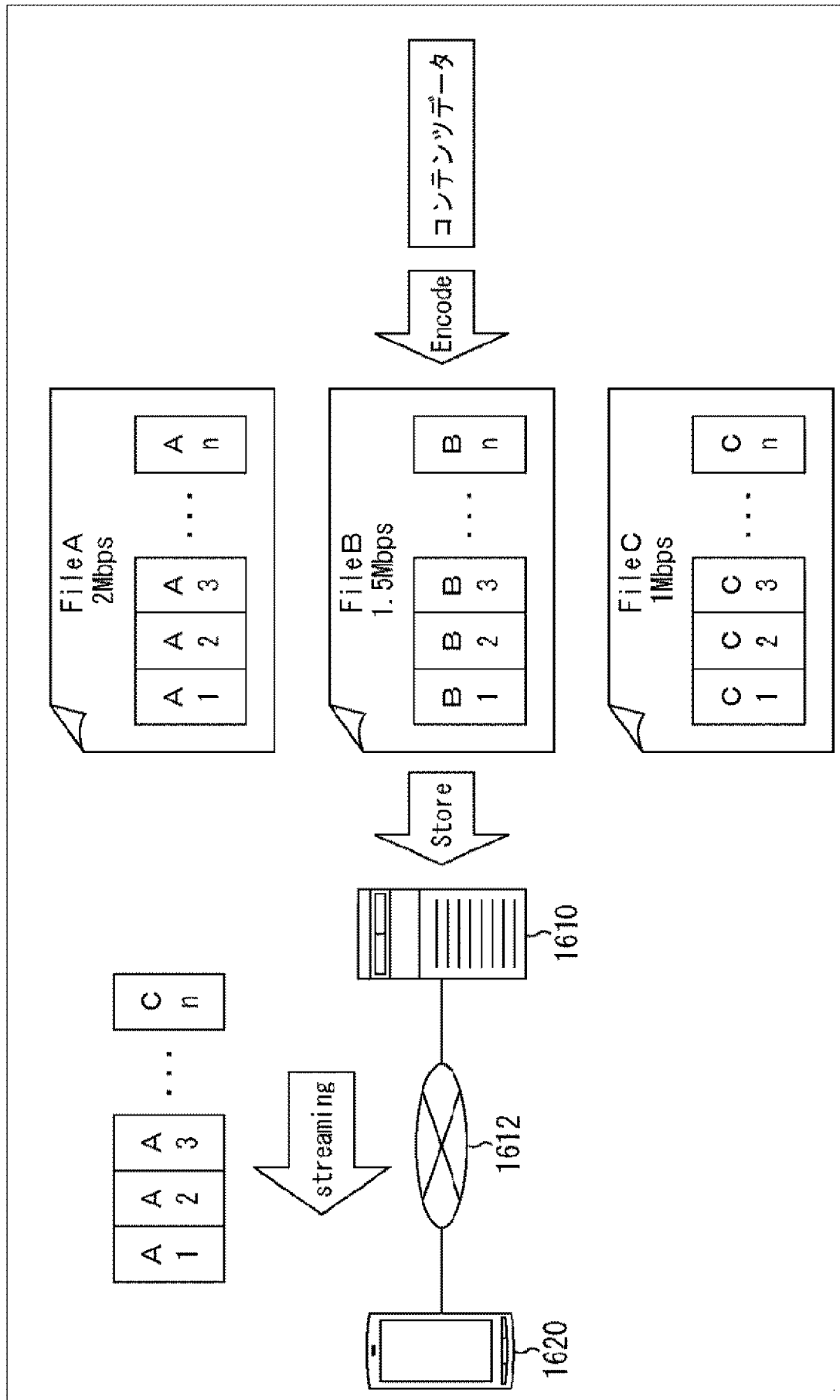
[図55]

図55



[図56]

図56



[図57]

図57

```

<?xml version="1.0"?>
<MPD
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns="urn:mpeg:DASH:schema:MPD:2011"
  xsi:schemaLocation="urn:mpeg:DASH:schema:MPD:2011 DASH-MPD.xsd"
  type="static"
  mediaPresentationDuration="PT32568"
  minBufferTime="PT1.2S"
  profiles="urn:mpeg:dash:profile:isoff-on-demand:2011">
  <BaseURL>http://cdn1.example.com/</BaseURL>
  <BaseURL>http://cdn2.example.com/</BaseURL>

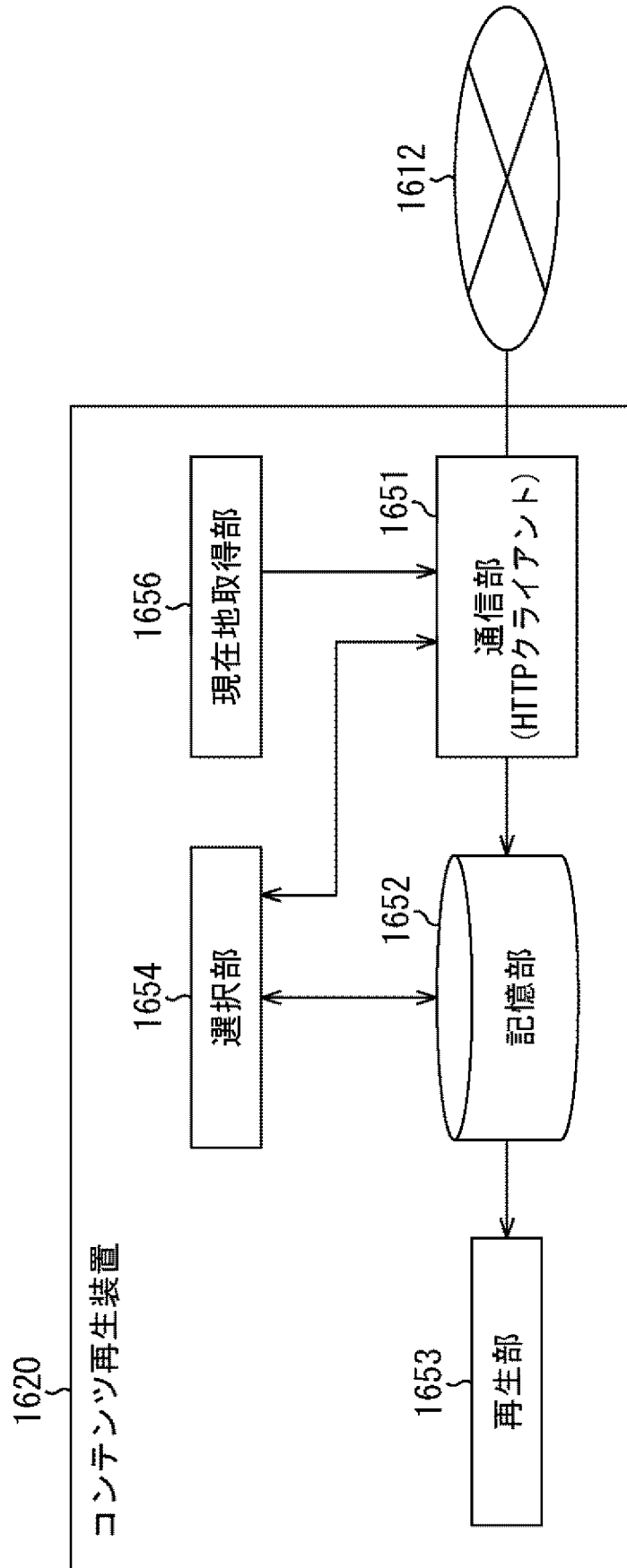
  <Period>
    <!--English Audio-->
    <AdaptationSet mimeType="audio/mp4" codecs="mp4a.0x40" lang="en" subsegmentAlignment="true" subsegmentStartsWithSAP="1">
      <ContentProtection schemeIdUri="urn:uuid:70606953-6560-5244-4D48-656164657221"/>
      <Representation id="1" bandwidth="84000">
        <BaseURL>7657412348.mp4</BaseURL>
      </Representation>
      <Representation id="2" bandwidth="32000">
        <BaseURL>3463846346.mp4</BaseURL>
      </Representation>
    </AdaptationSet>
  </Period>

  <!--Video-->
  <AdaptationSet mimeType="video/mp4" codecs="avc1.4d0220" subsegmentAlignment="true" subsegmentStartsWithSAP="2">
    <ContentProtection schemeIdUri="urn:uuid:70606953-6560-5244-4D48-656164657221"/>
    <Representation id="6" bandwidth="256000" width="320" height="240">
      <BaseURL>8563456473.mp4</BaseURL>
    </Representation>
    <Representation id="7" bandwidth="512000" width="320" height="240">
      <BaseURL>56363634.mp4</BaseURL>
    </Representation>
    <Representation id="8" bandwidth="1024000" width="640" height="480">
      <BaseURL>562485736.mp4</BaseURL>
    </Representation>
    <Representation id="9" bandwidth="1384000" width="640" height="480">
      <BaseURL>41325646.mp4</BaseURL>
    </Representation>
    <Representation id="A" bandwidth="1536000" width="1280" height="720">
      <BaseURL>89045625.mp4</BaseURL>
    </Representation>
    <Representation id="B" bandwidth="2048000" width="1280" height="720">
      <BaseURL>23536745734.mp4</BaseURL>
    </Representation>
  </AdaptationSet>
  </Period>
</MPD>

```

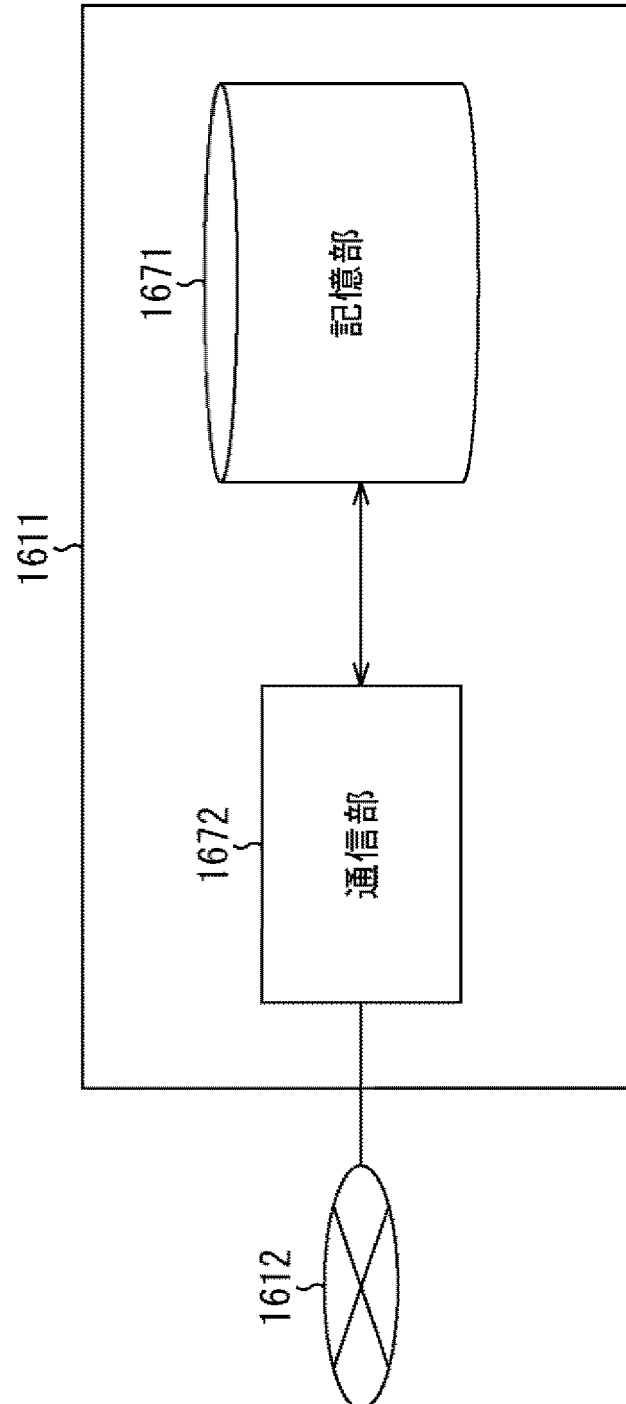
[図58]

図58

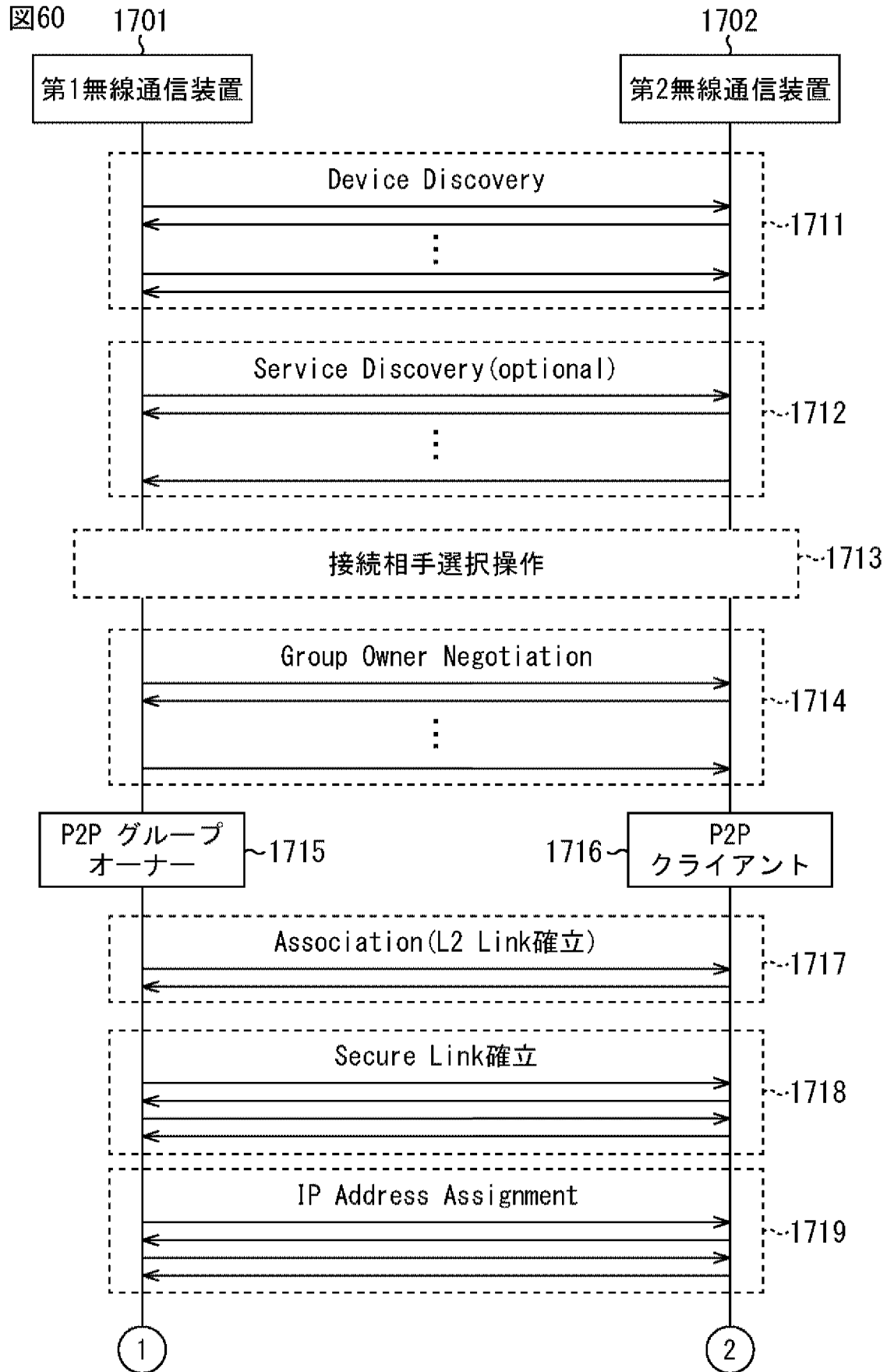


[図59]

図59

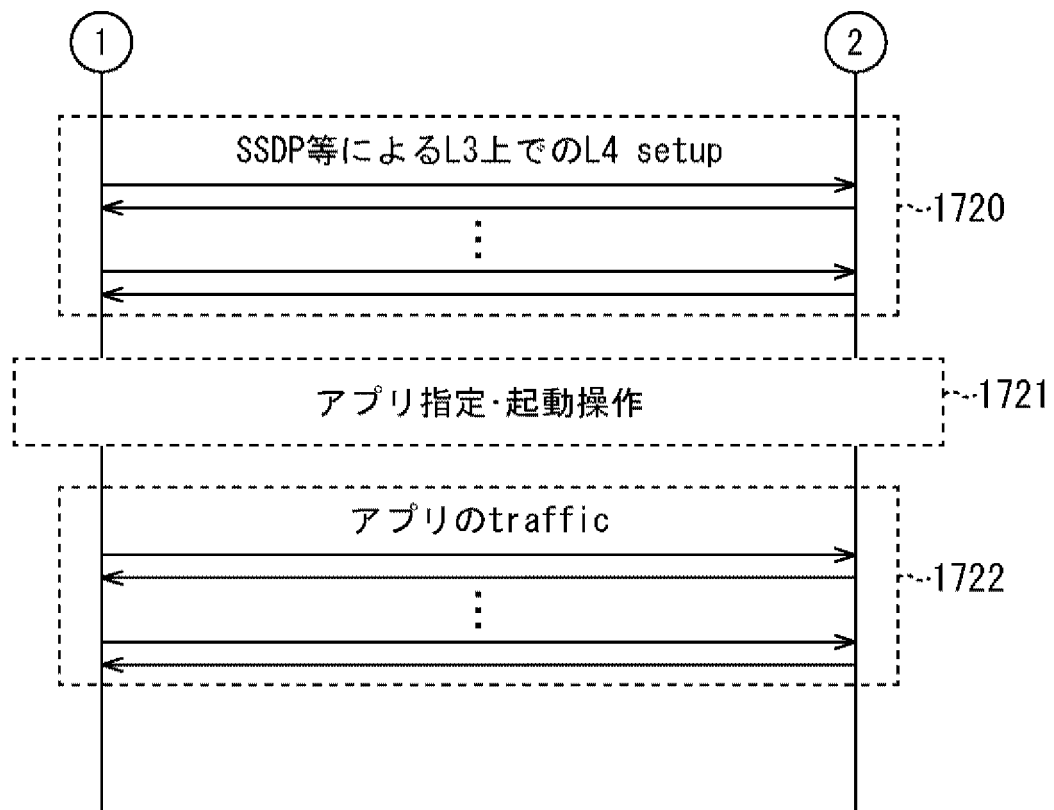


[図60]



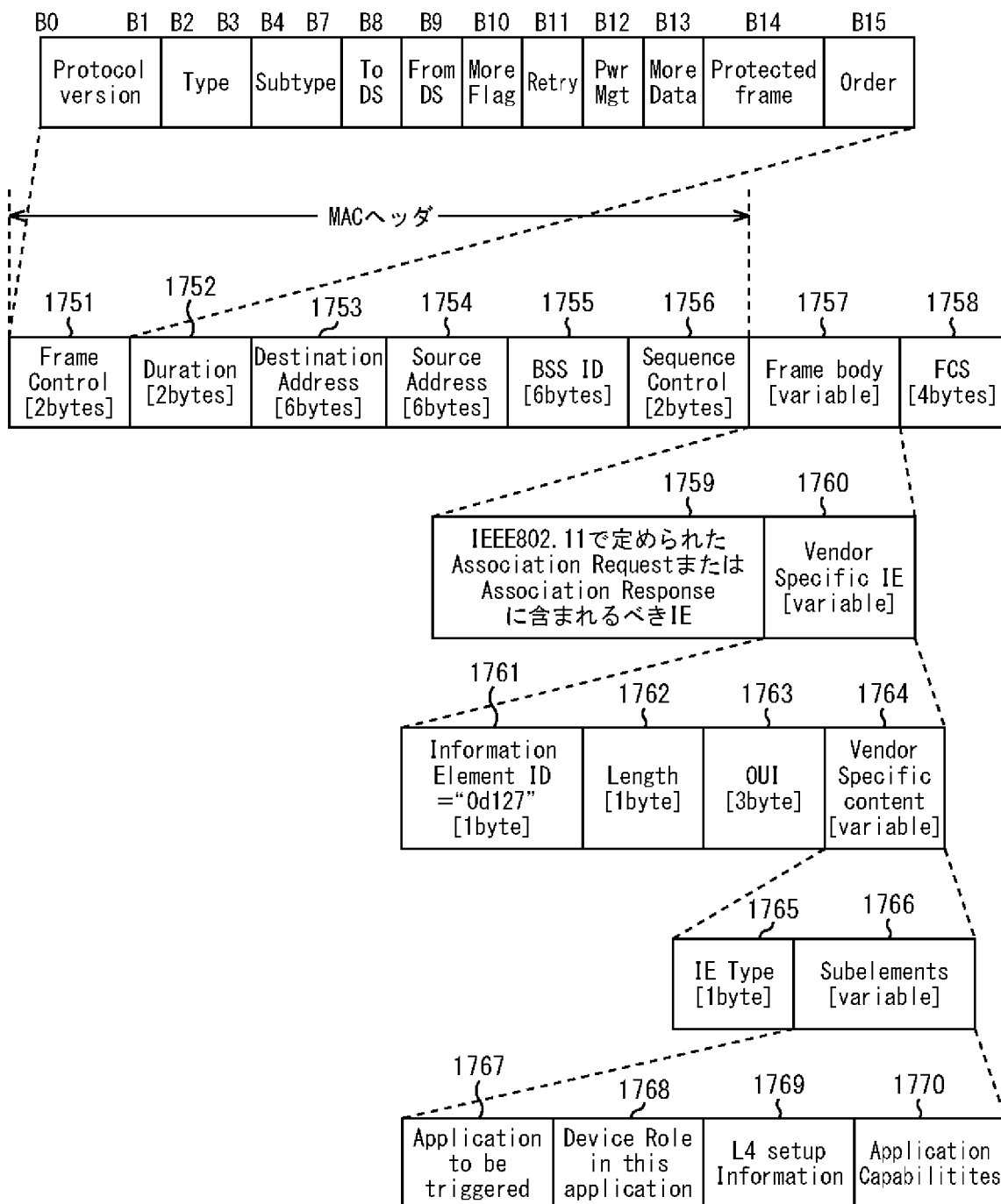
[図61]

図61



[図62]

図62



[図63]

図63

