

FIG. 1

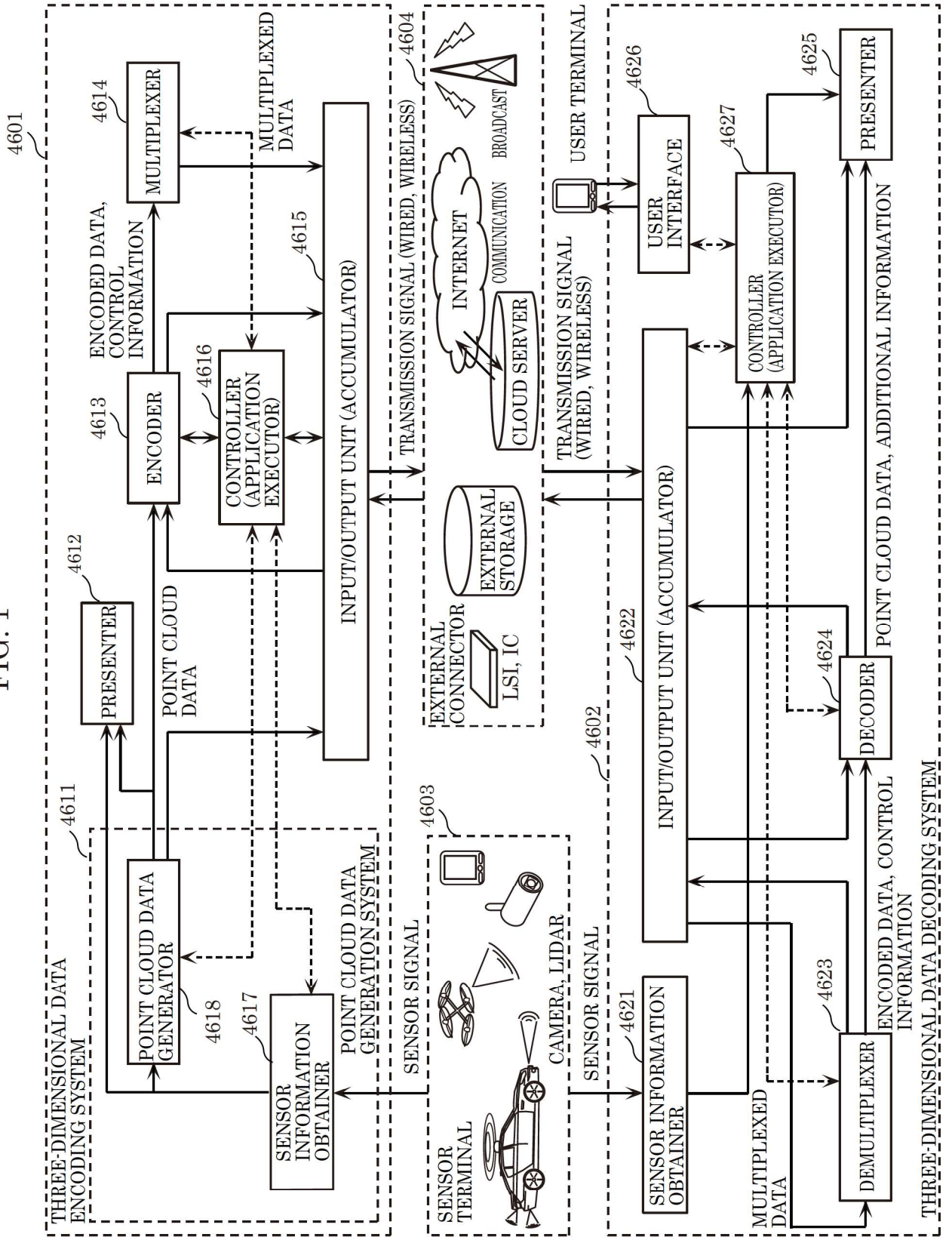


FIG. 2

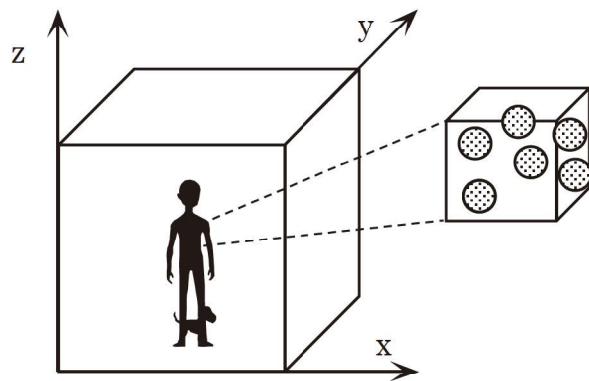


FIG. 3

	GEOMETRY INFORMATION	ATTRIBUTE INFORMATION
n = 1	$G(1) = (x_1, y_1, z_1)$	$A(1) = (R_1, G_1, B_1)$
n = 2	$G(2) = (x_2, y_2, z_2)$	$A(2) = (R_2, G_2, B_2)$
$\vdots$	$\vdots$	$\vdots$
n = N	$G(N) = (x_N, y_N, z_N)$	$A(N) = (R_N, G_N, B_N)$

FIG. 4

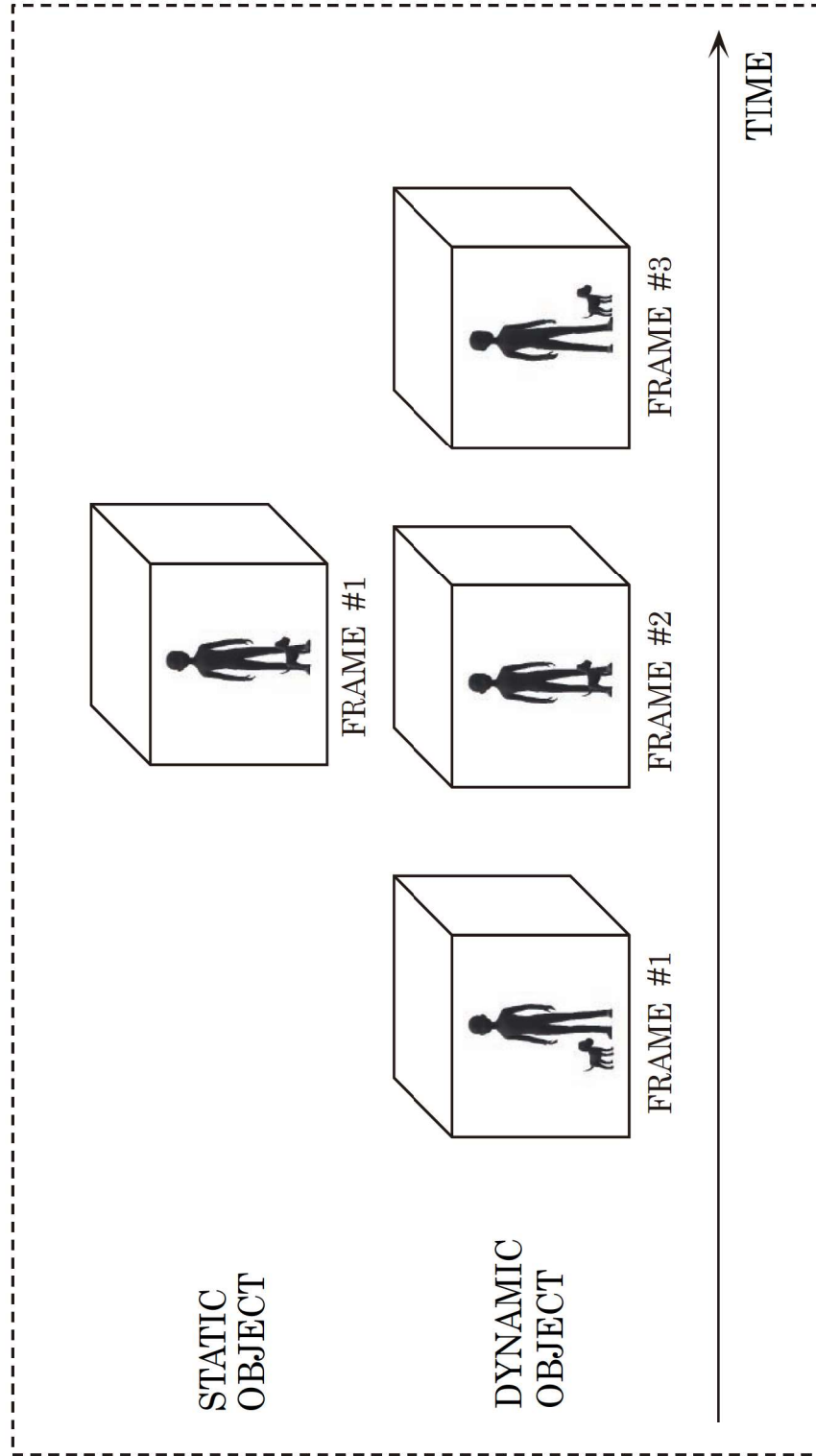


FIG. 5

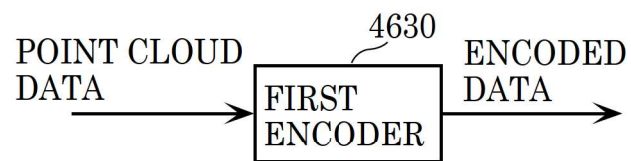


FIG. 6

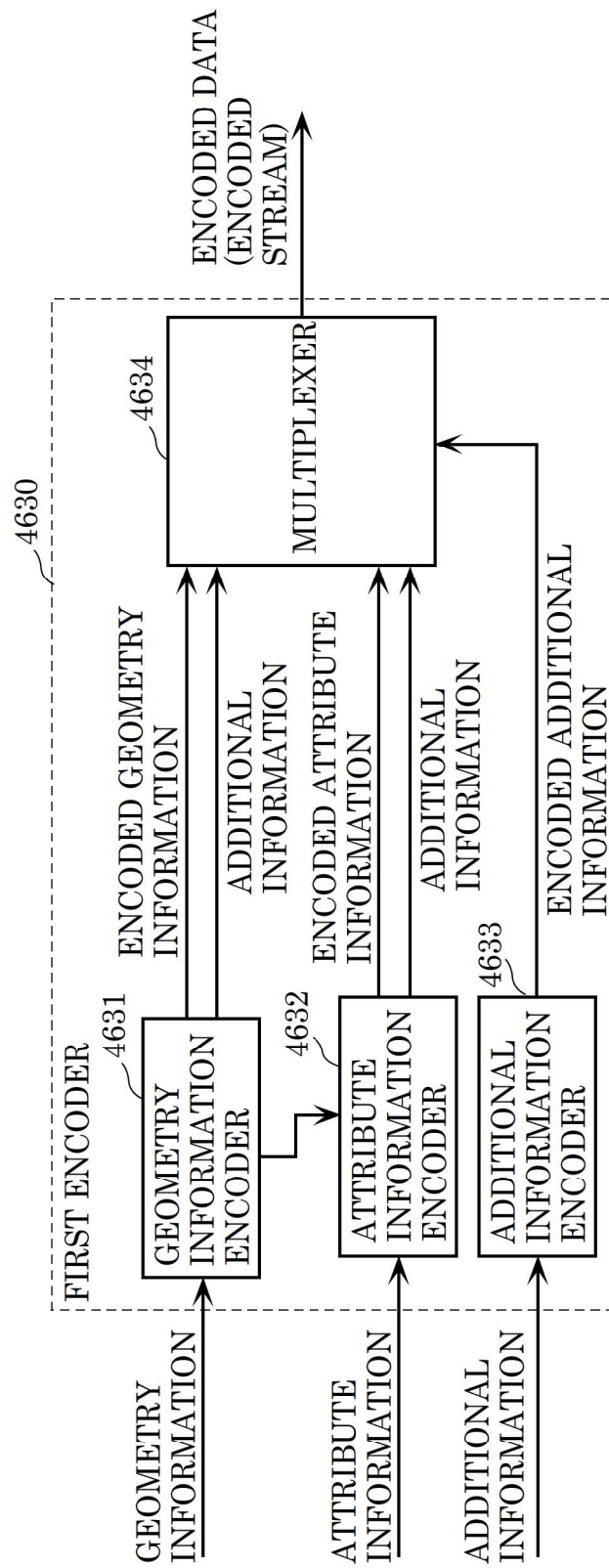


FIG. 7

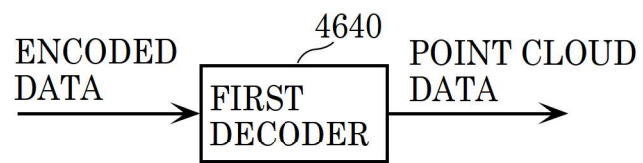


FIG. 8

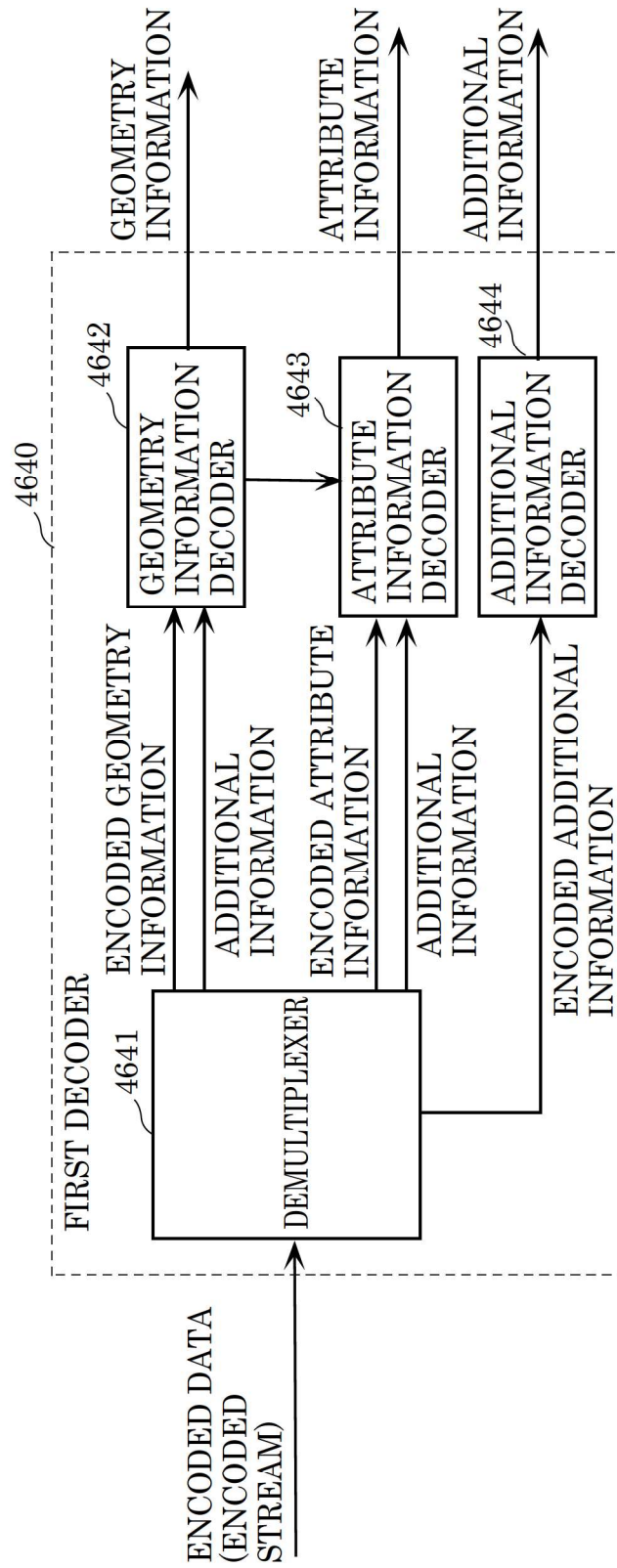


FIG. 9

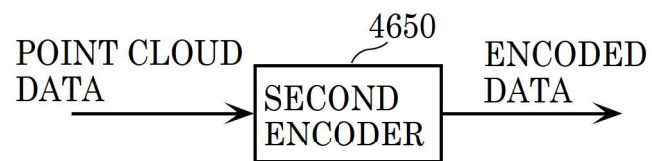


FIG. 10

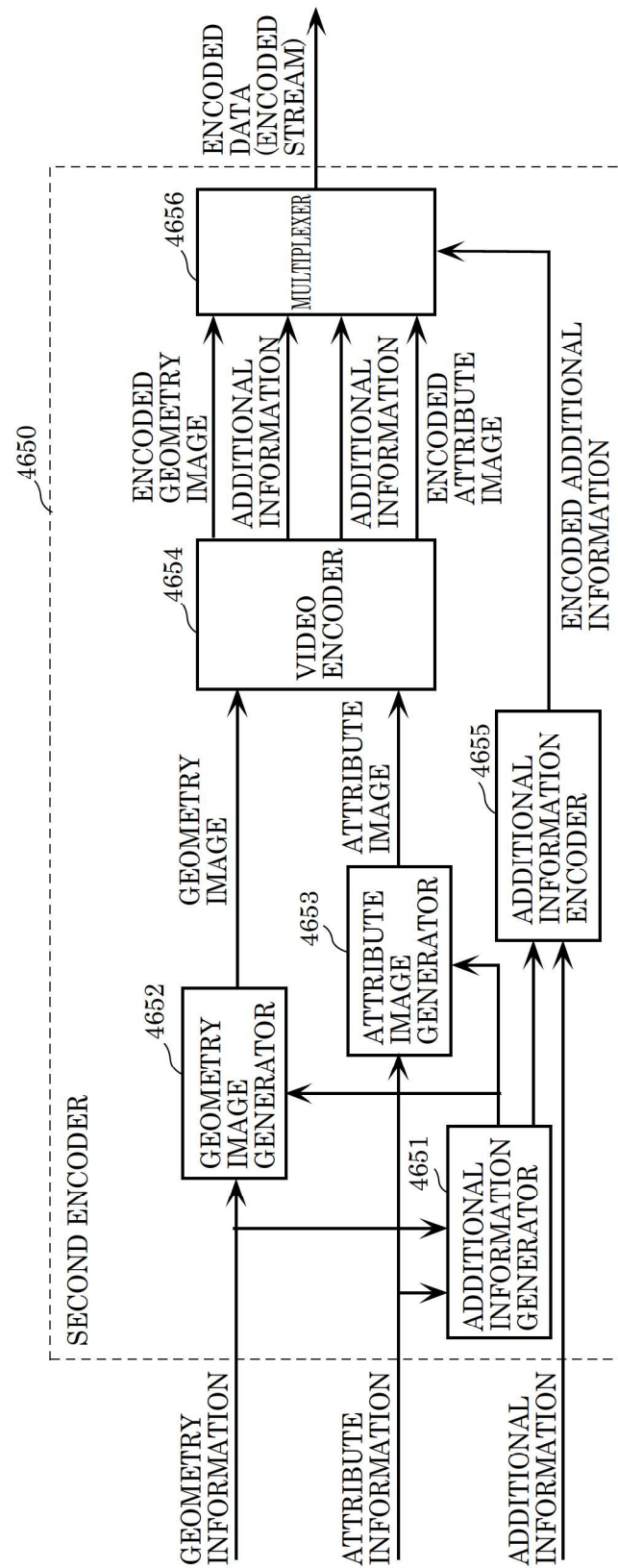


FIG. 11

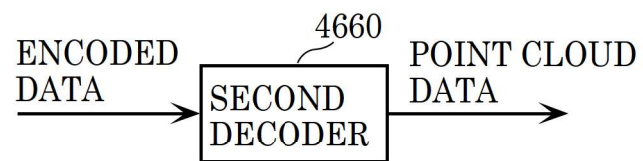


FIG. 12

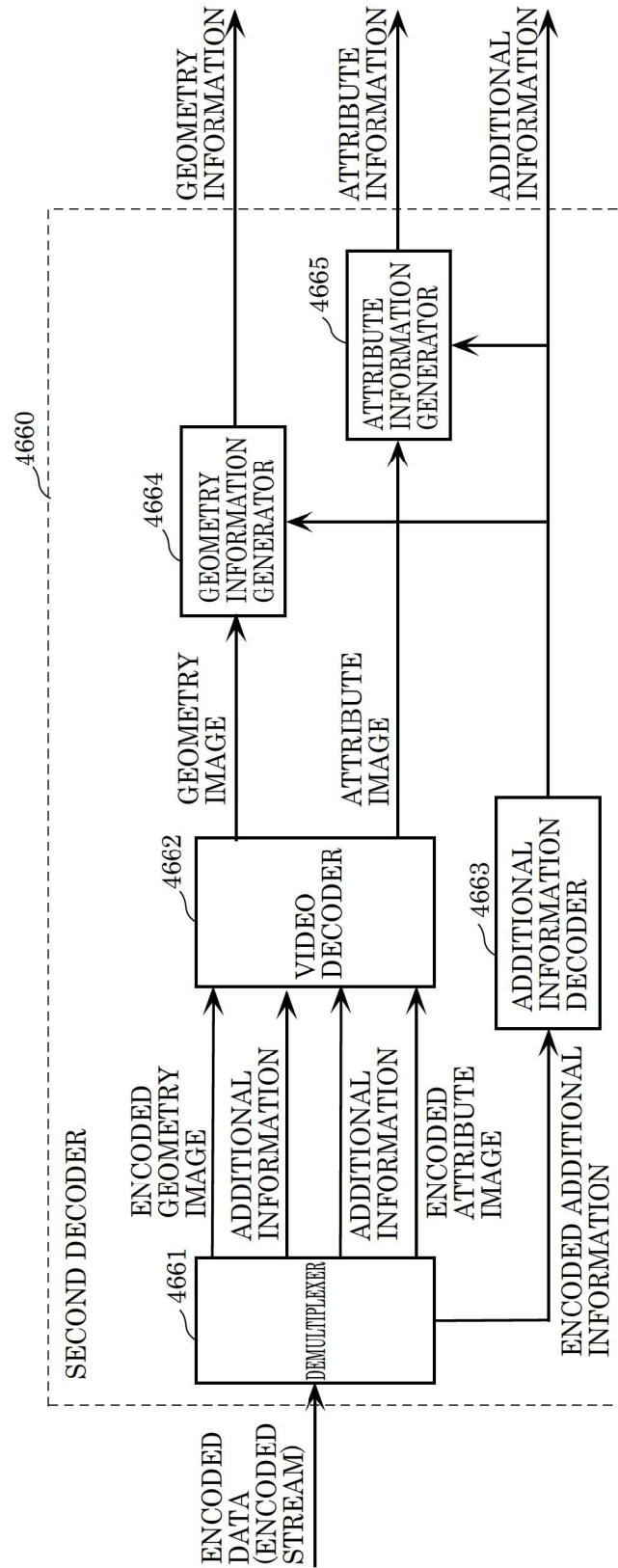


FIG. 13

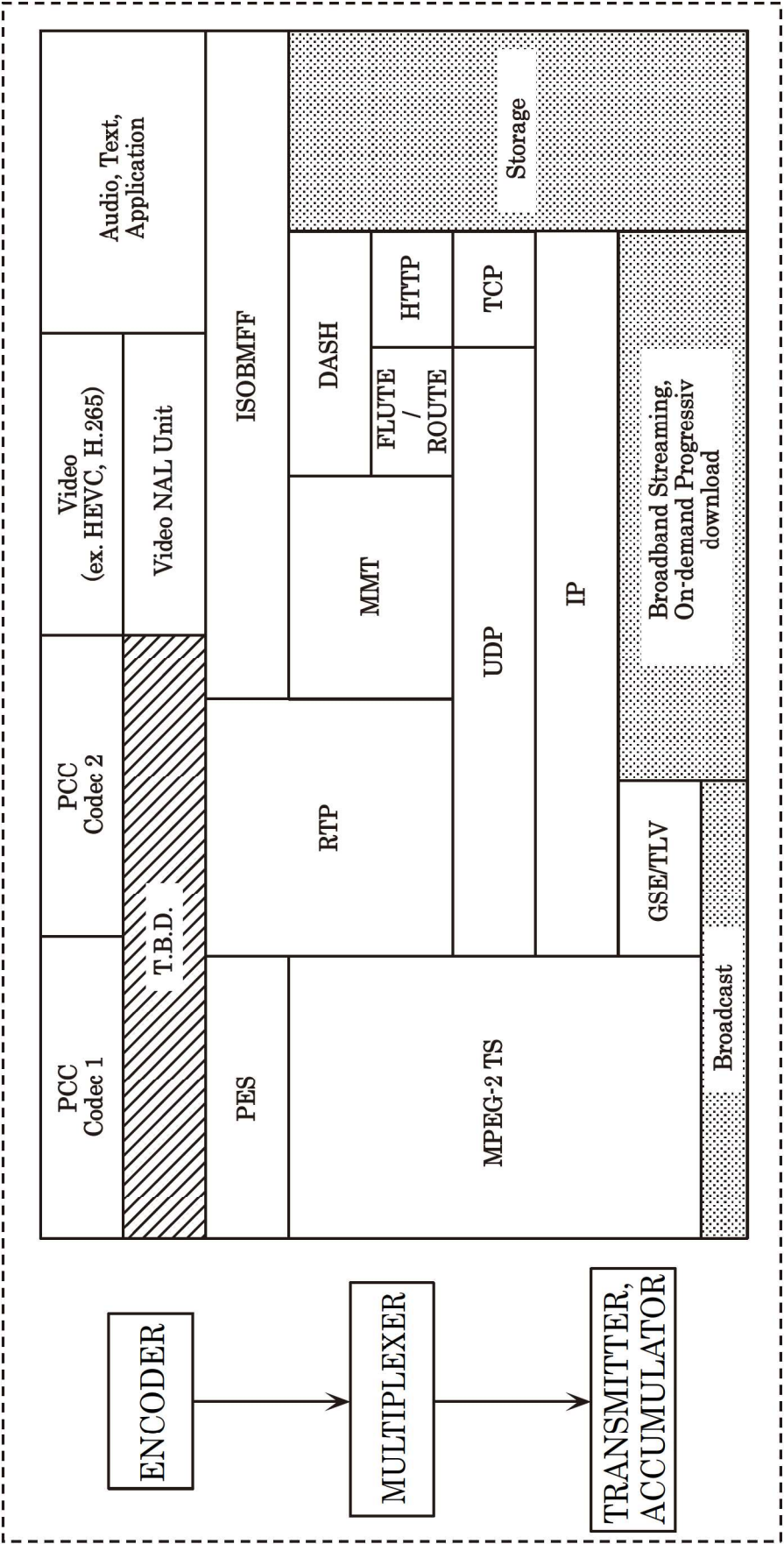


FIG. 14

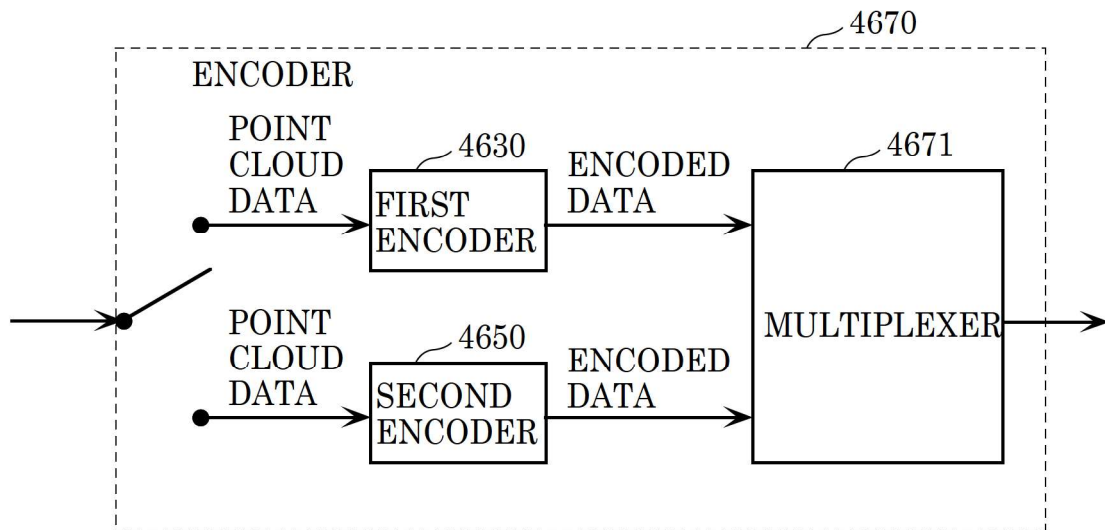


FIG. 15

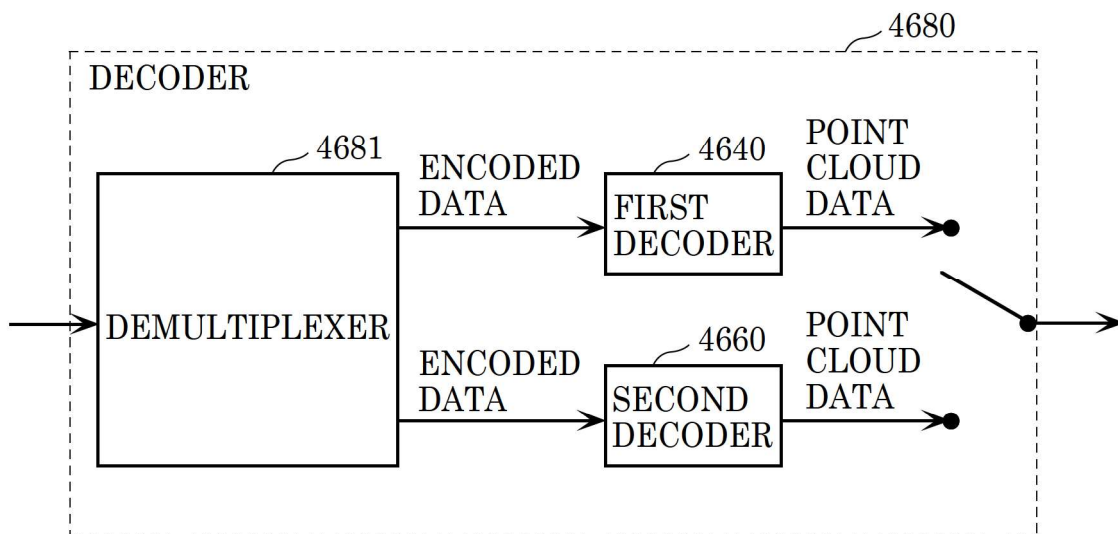


FIG. 16

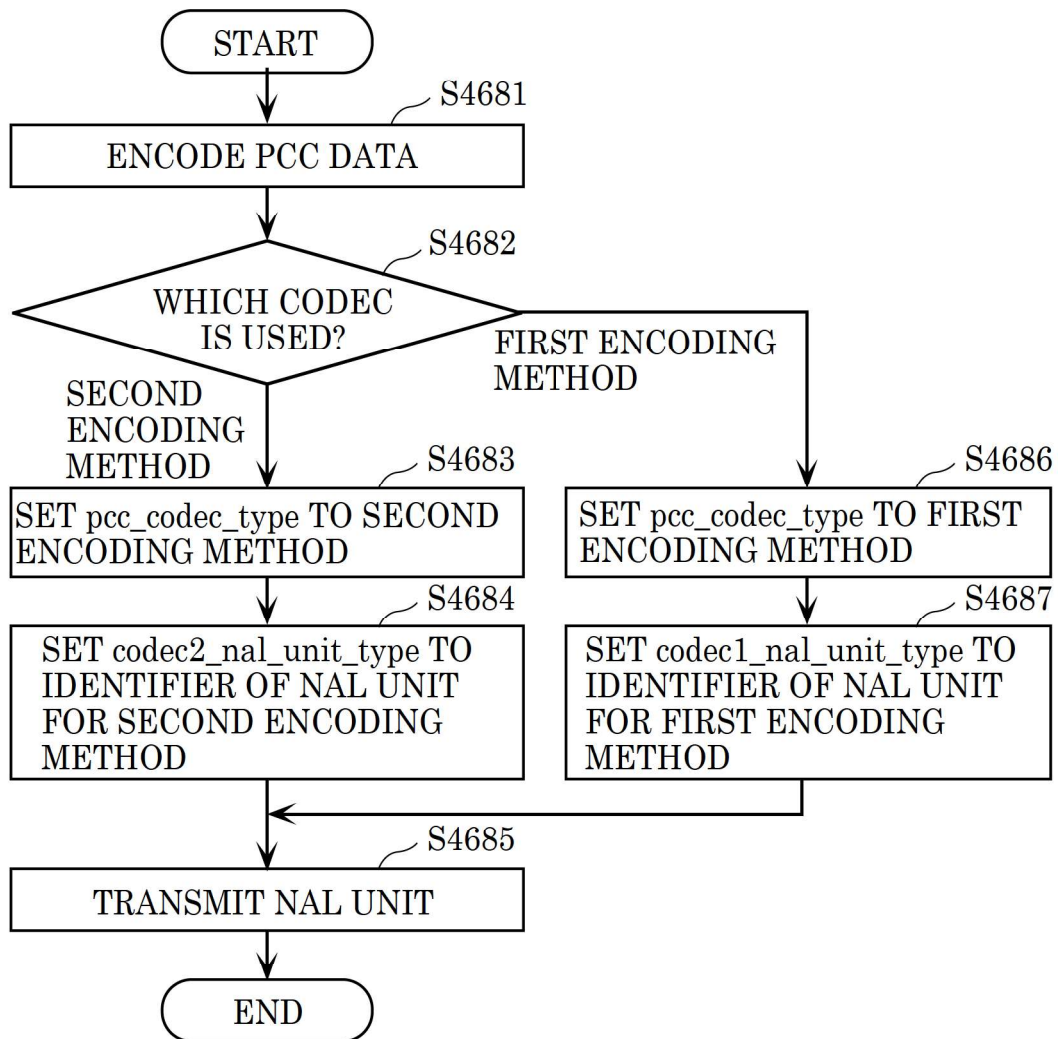


FIG. 17

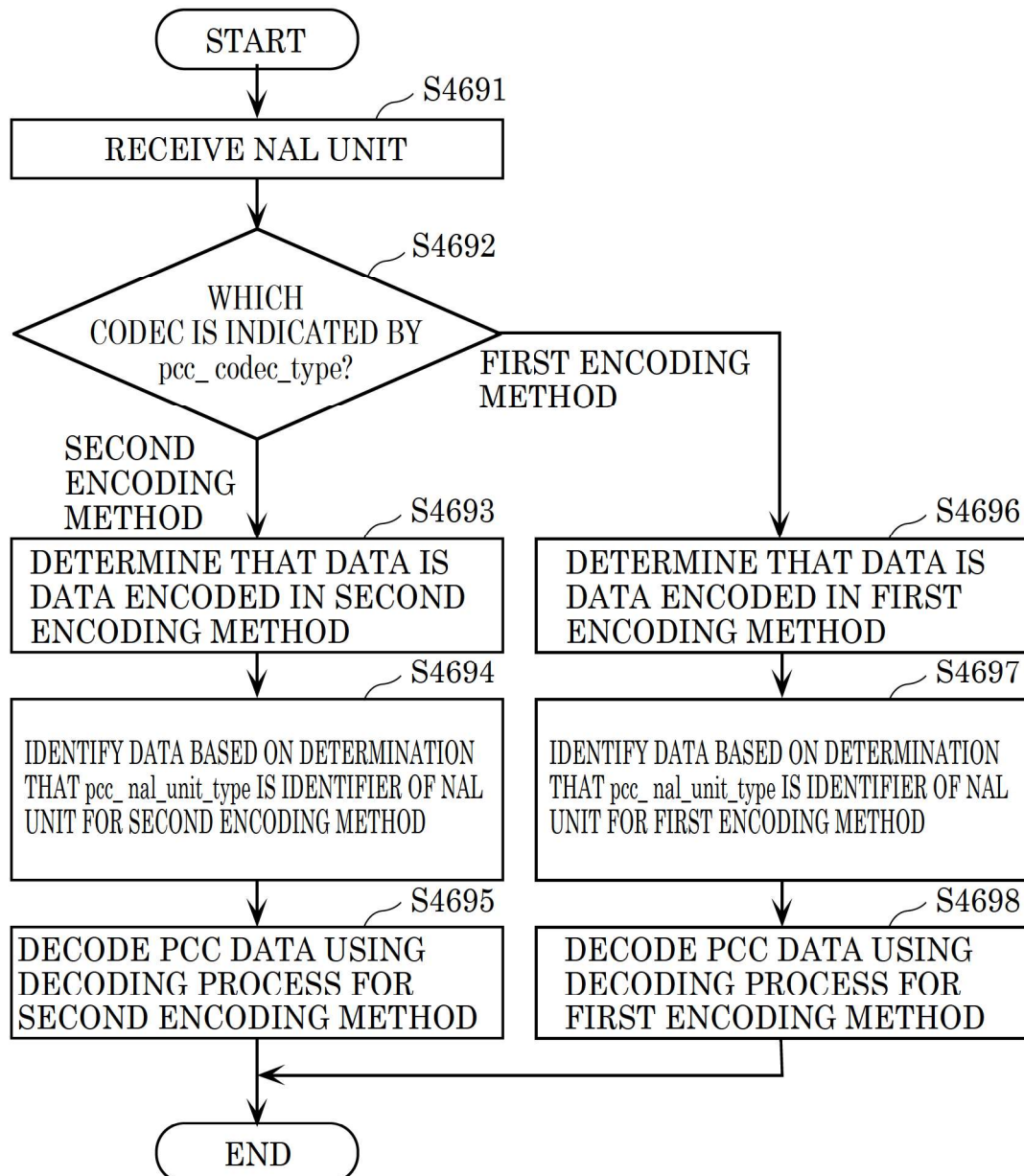


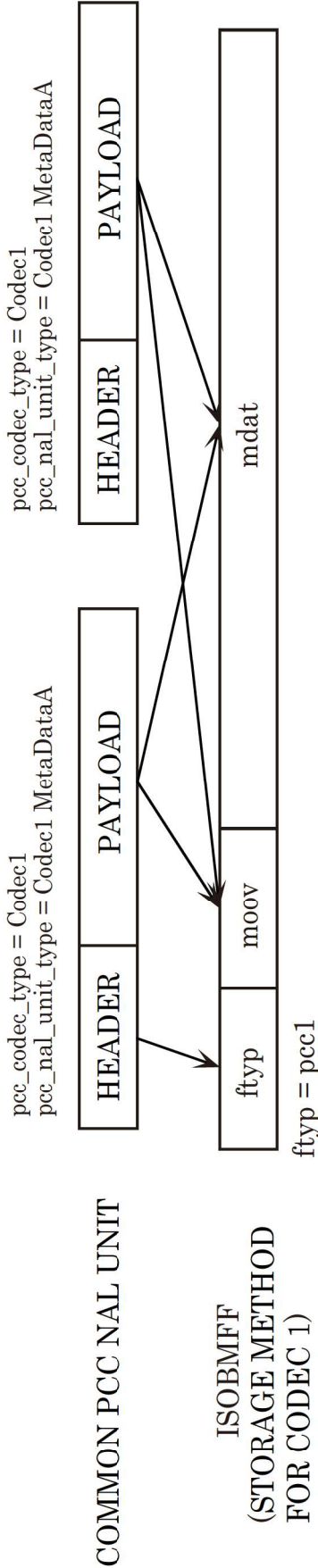
FIG. 18

ftyp	moov	mdat
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FIG. 19

Codec 1	Codec 2
Codec 1 NAL unit	Codec 2 NAL unit
PCC NAL Unit	
Carriage of Codec 1	Carriage of Codec 2
ISOBMFF	

FIG. 20



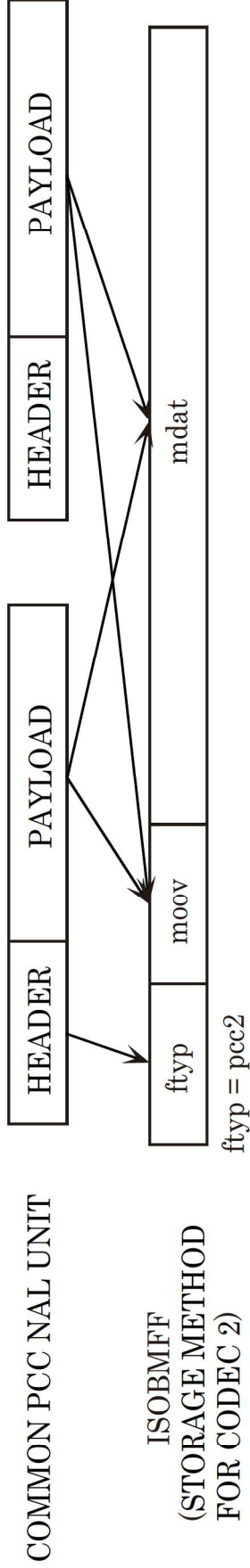


FIG. 21

FIG. 22

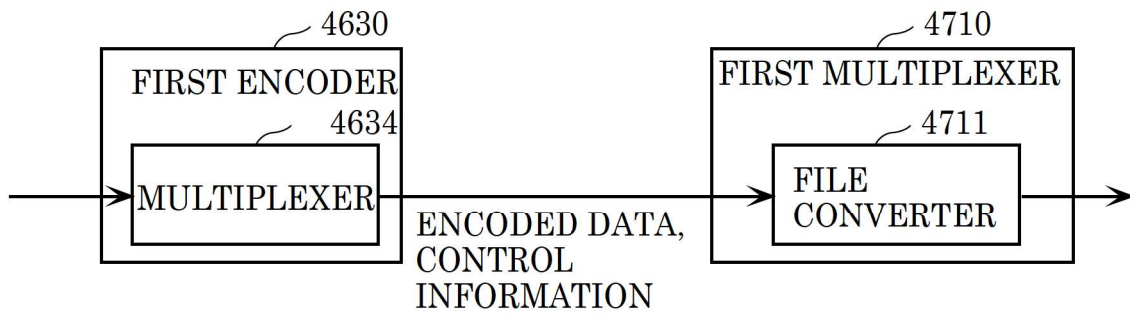


FIG. 23

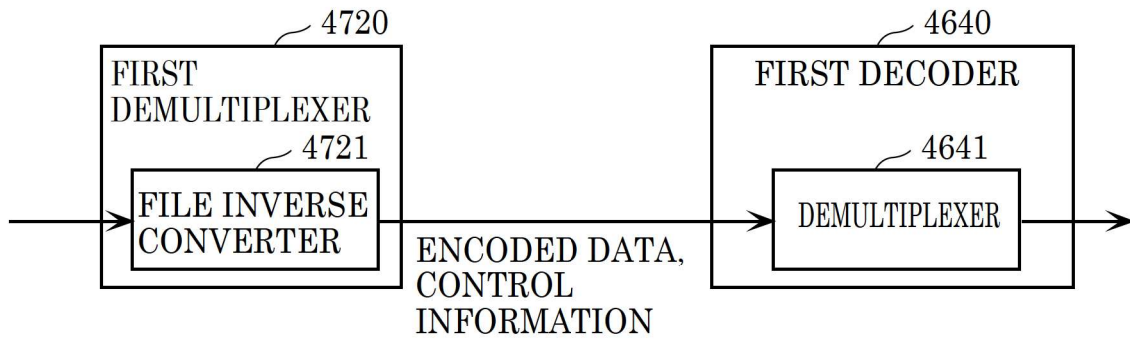


FIG. 24

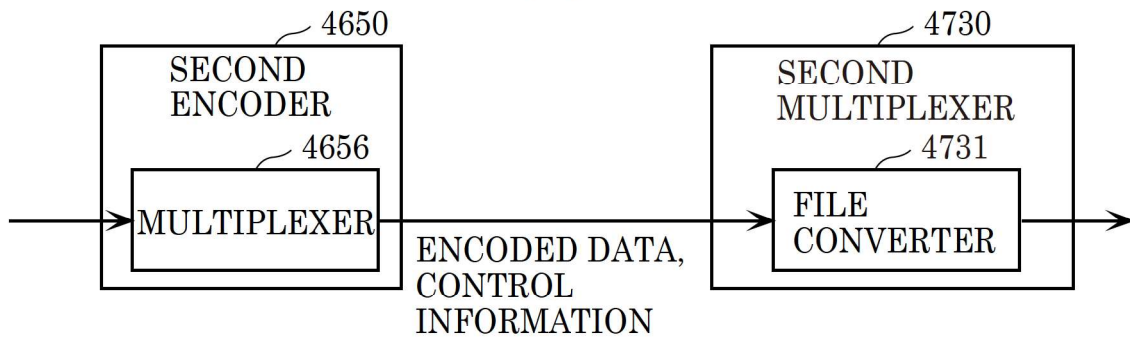


FIG. 25

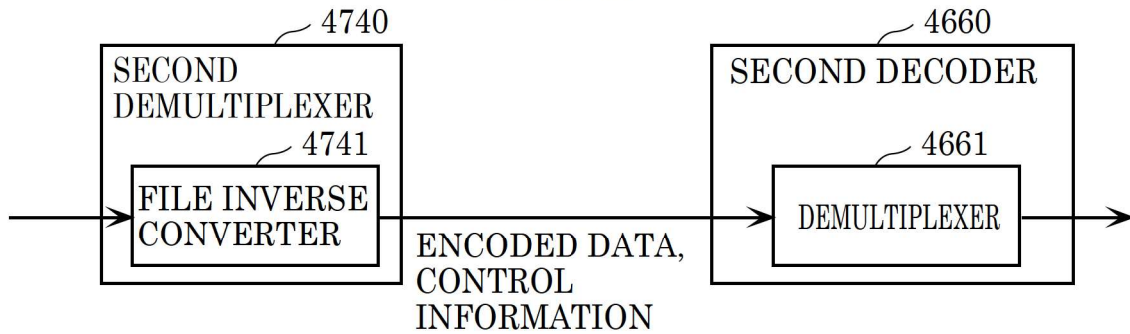


FIG. 26

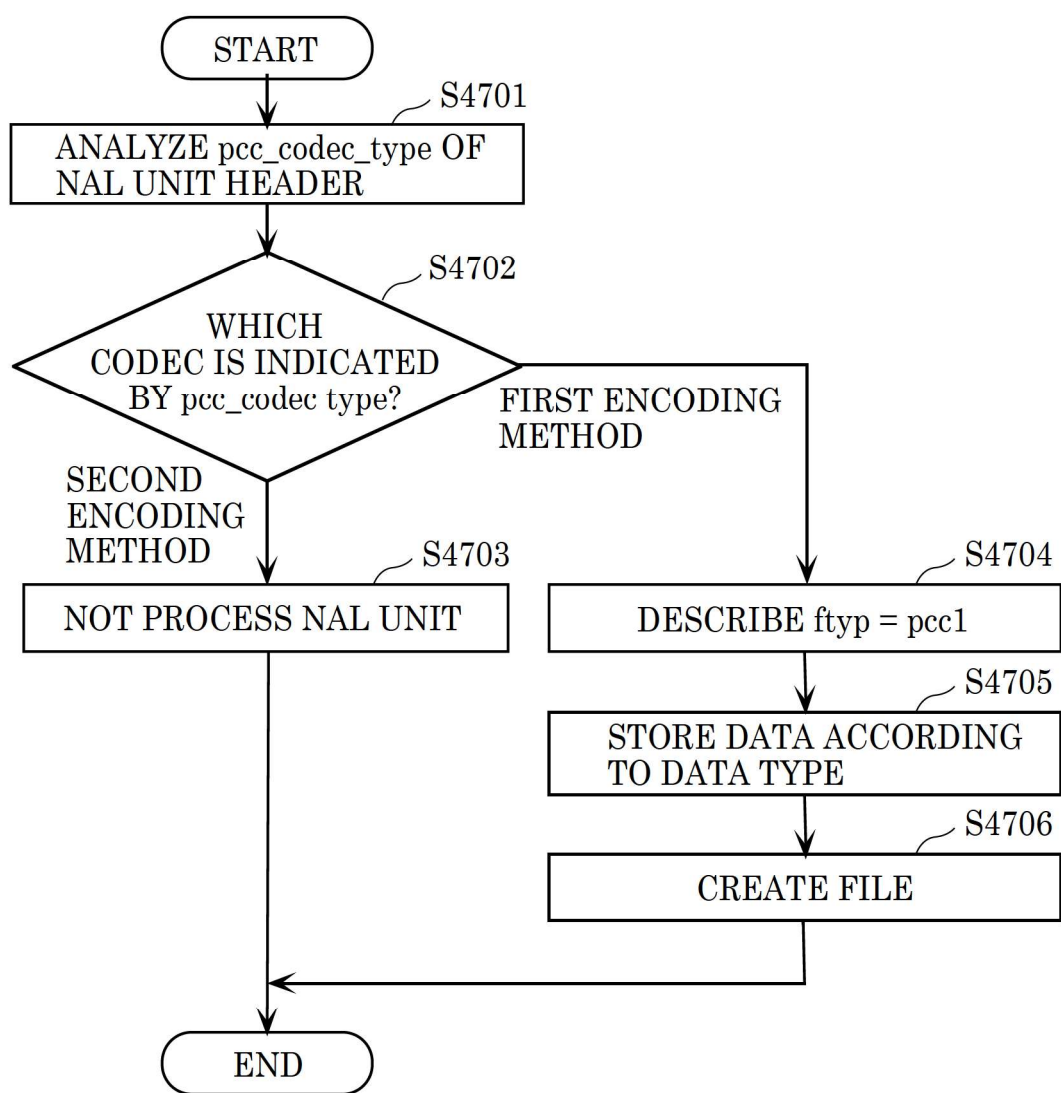


FIG. 27

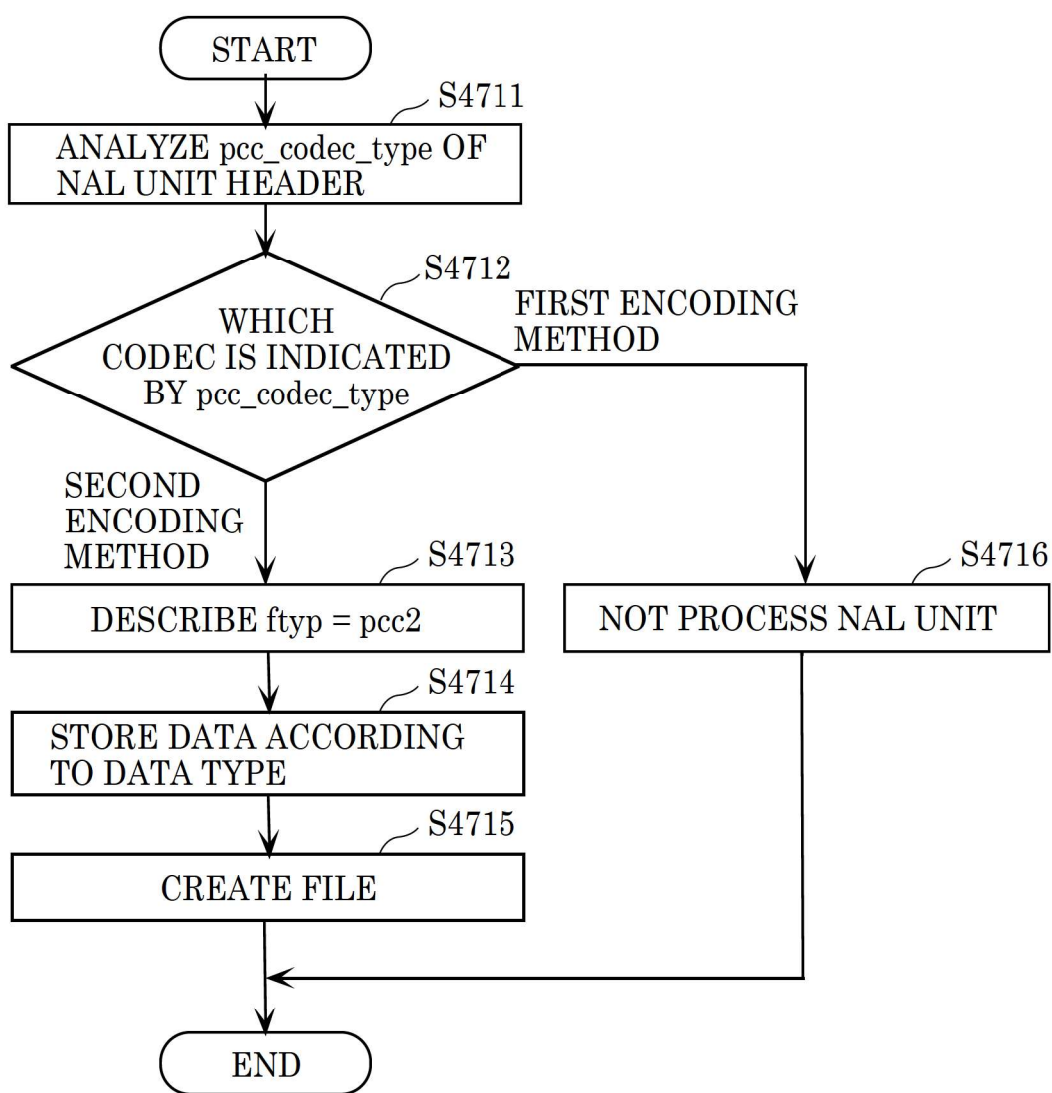


FIG. 28

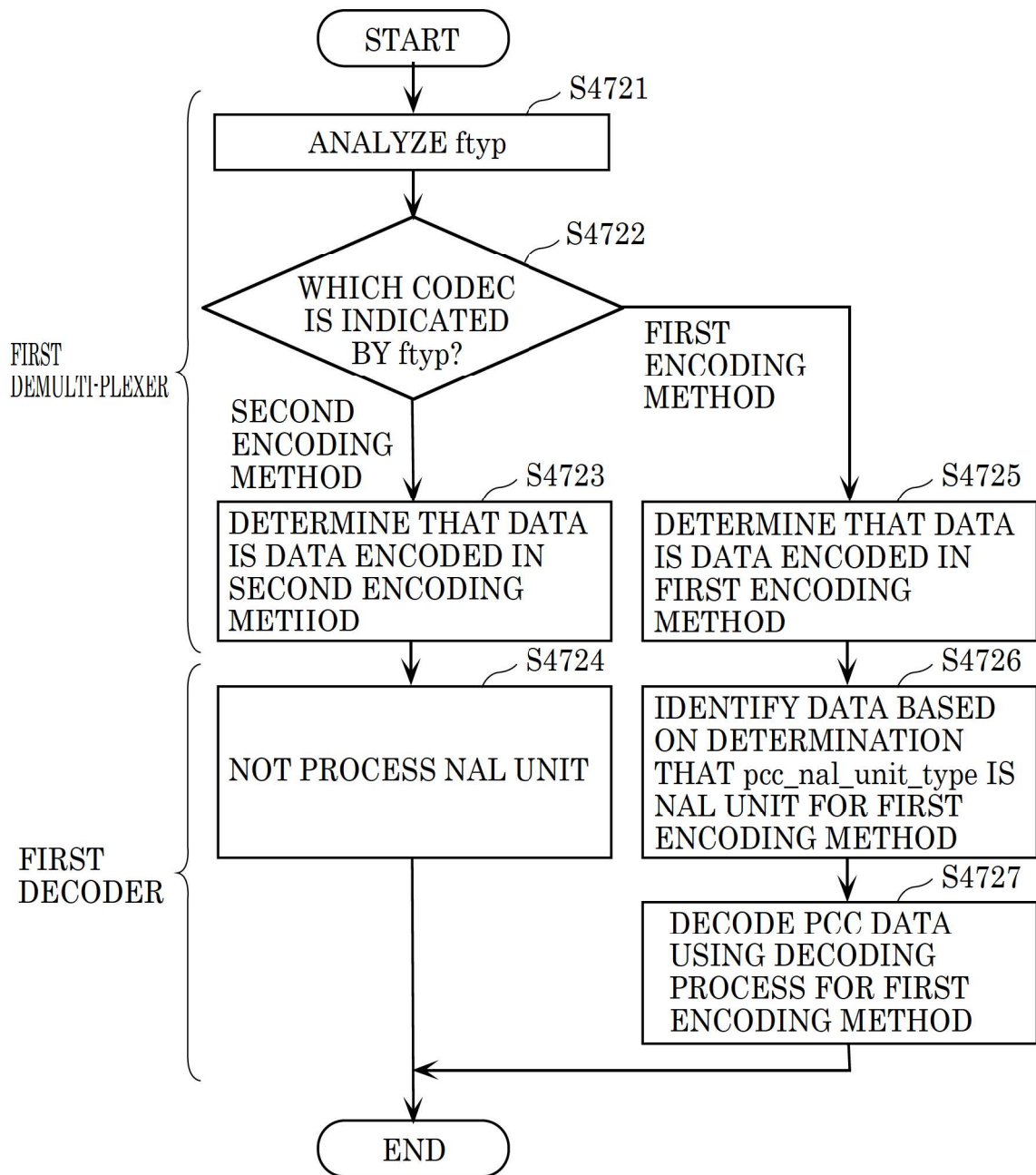


FIG. 29

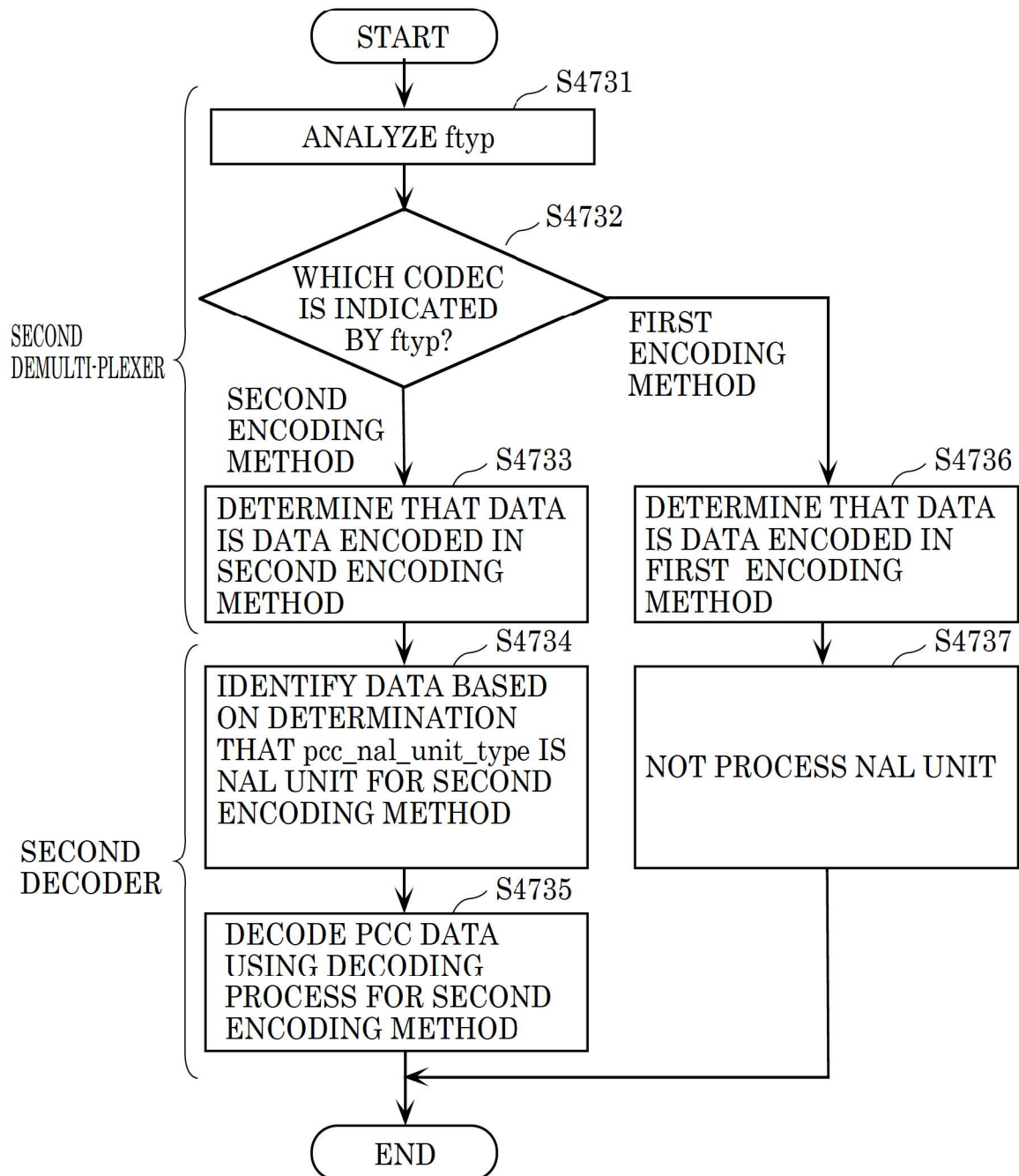


FIG. 30

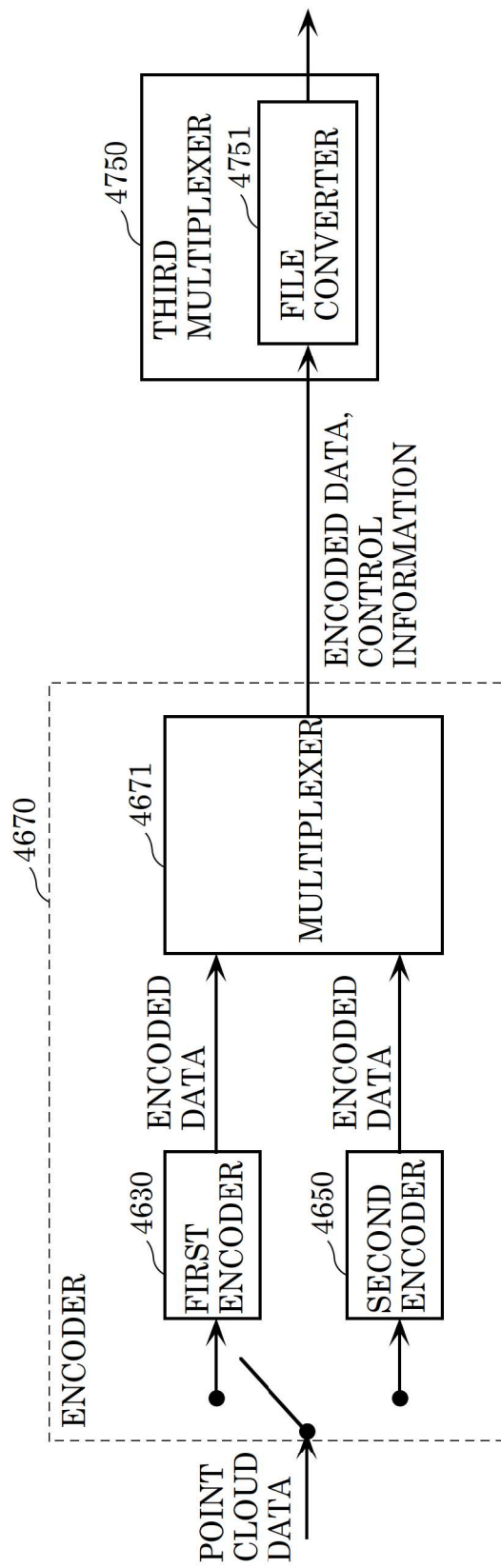


FIG. 31

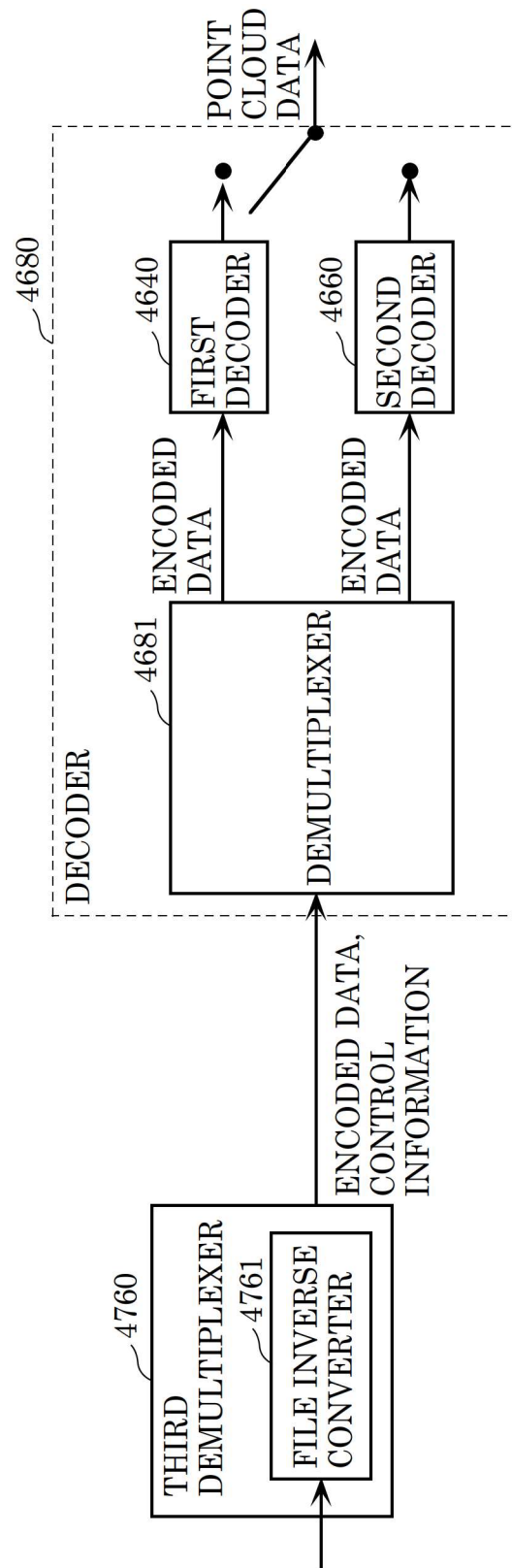


FIG. 32

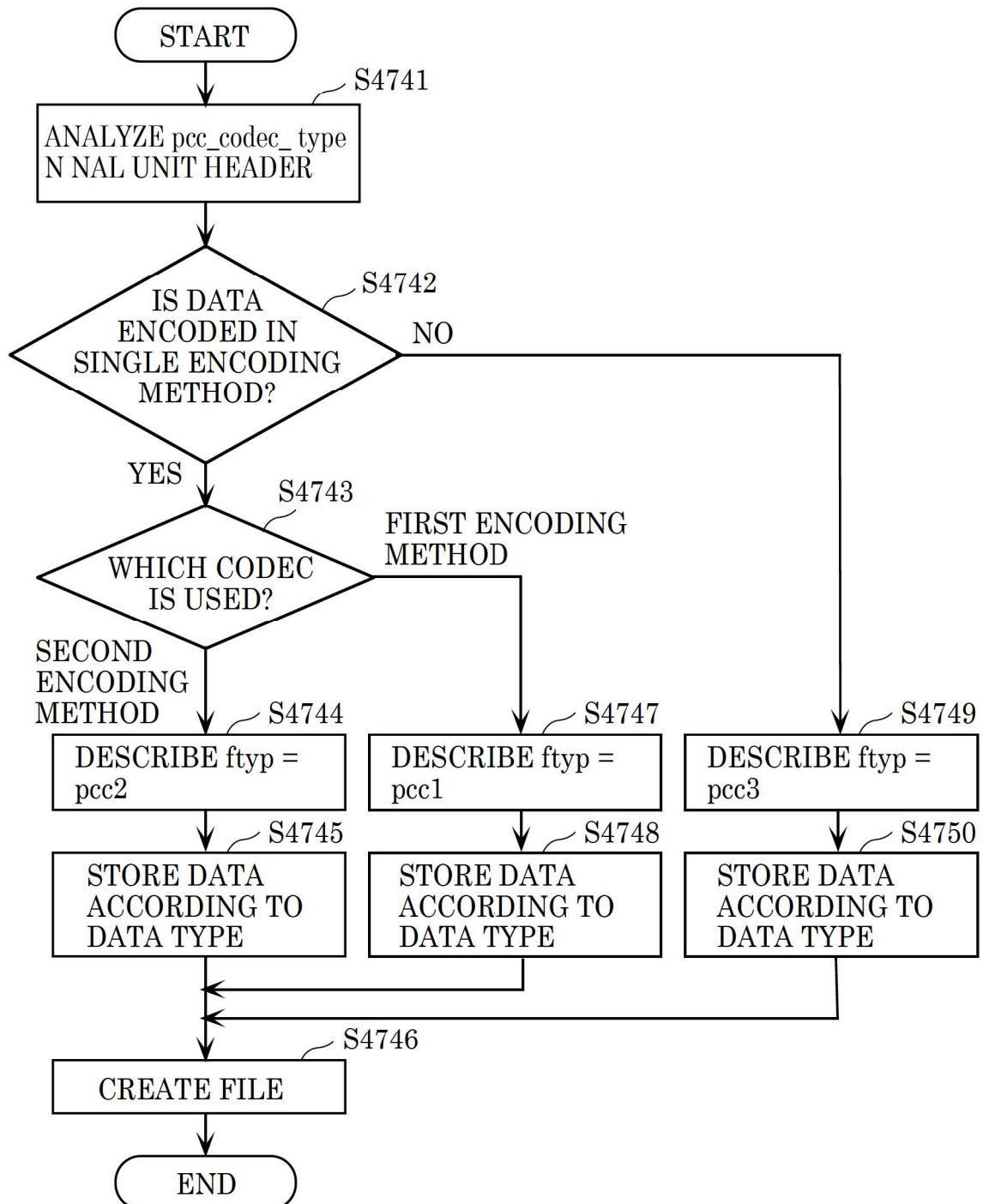


FIG. 33

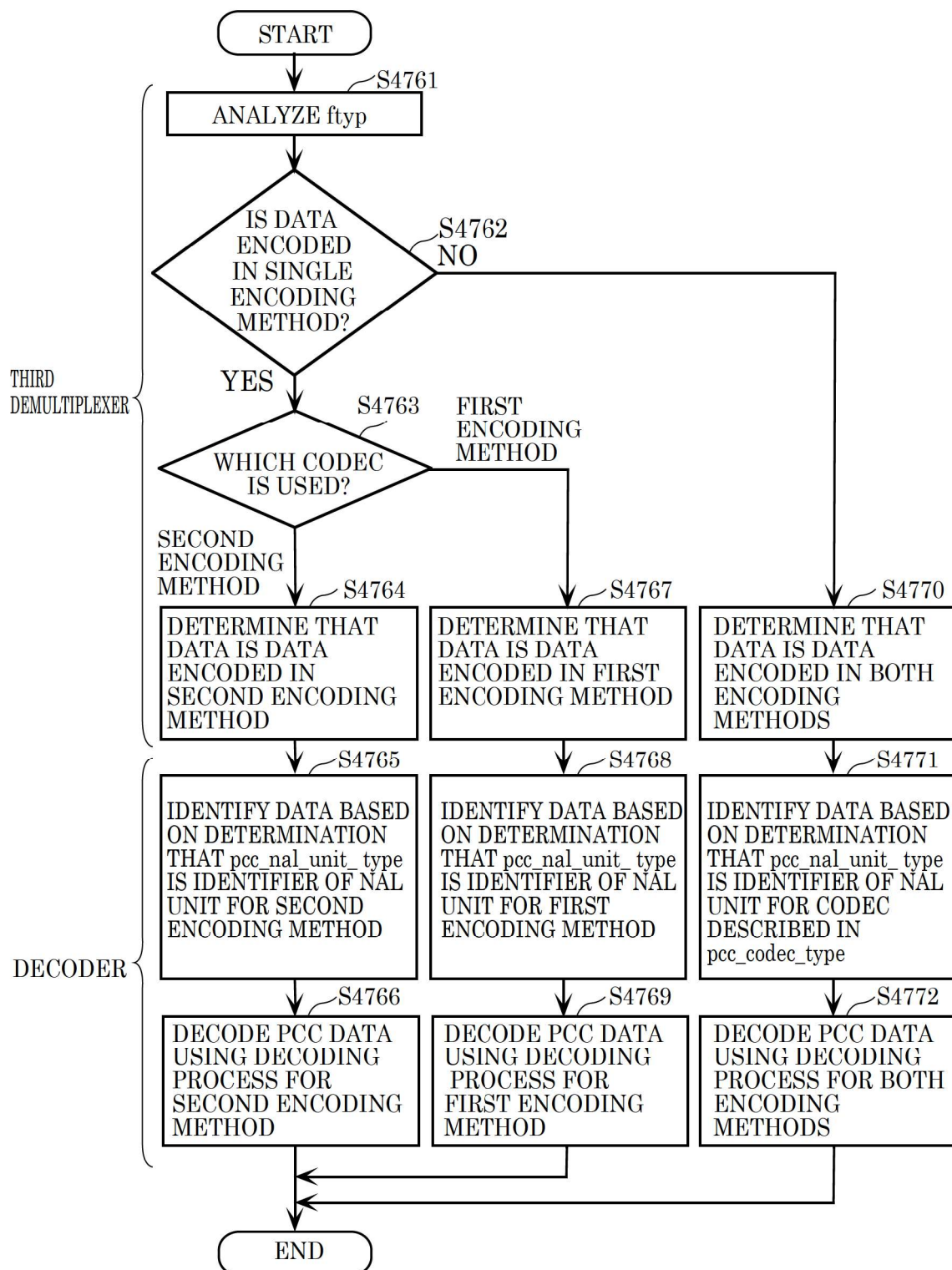


FIG. 34

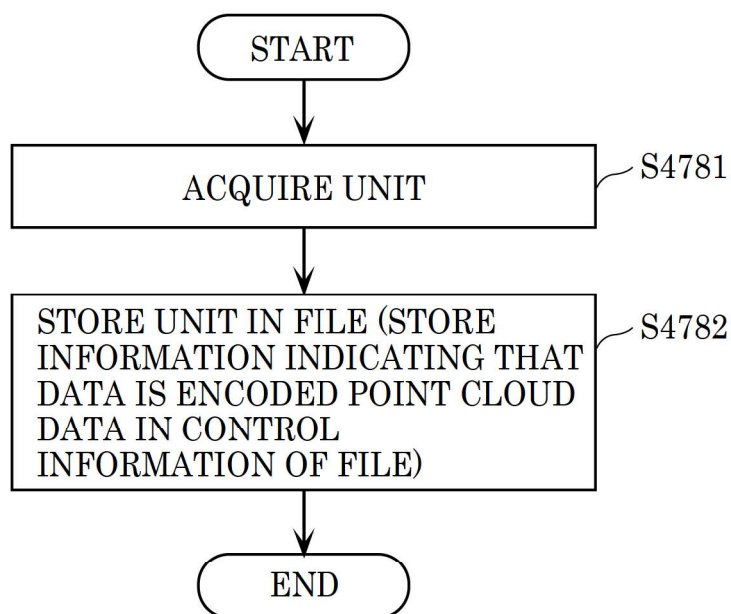


FIG. 35

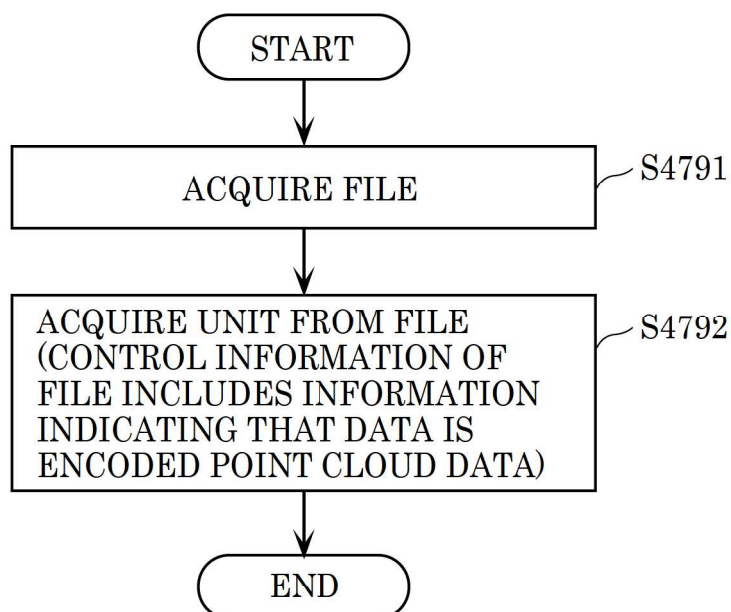


FIG. 36

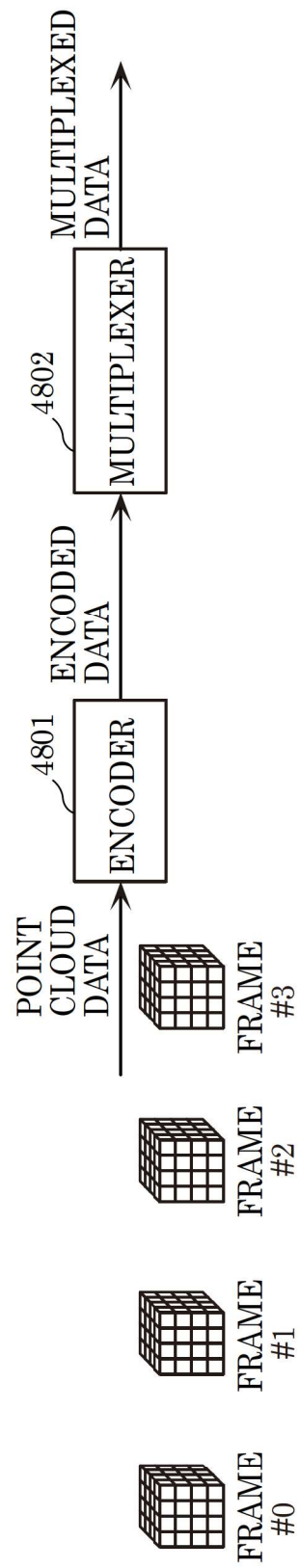


FIG. 37

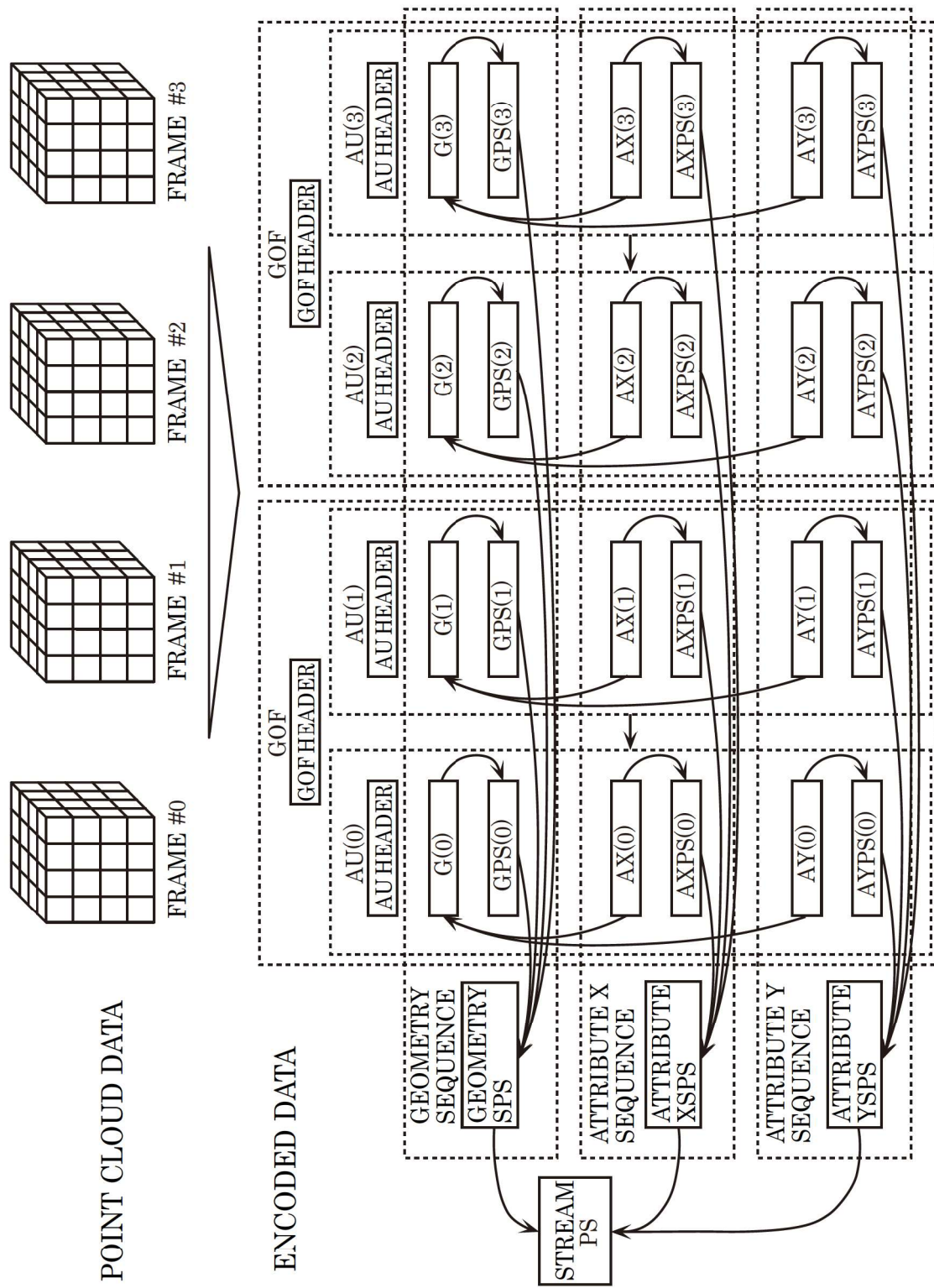


FIG. 38

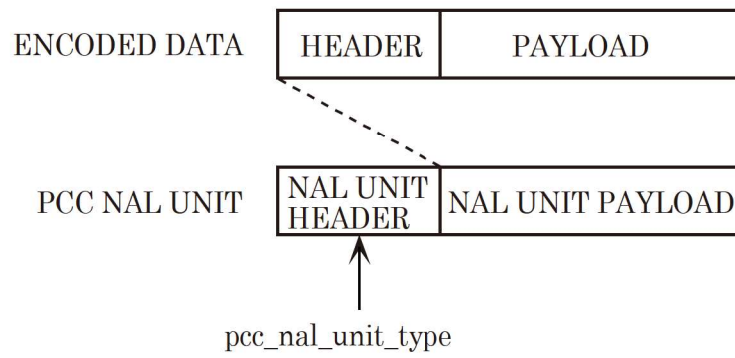


FIG. 39

EXAMPLES OF SEMANTICS OF pcc_nal_unit_type

(1) if pcc_codec_type == Codec 1

- 0:Codec1 Geometry
- 1:Codec1 AttributeX
- 2:Codec1 AttributeY
- 3:Codec1 Geom. PS
- 4:Codec1 AttrX. PS
- 5:Codec1 AttrX. PS
- 6:Codec1 Geometry Sequence PS
- 7:Codec1 AttributeX Sequence PS
- 8:Codec1 AttributeY Sequence PS
- 9:Codec1 AU Header
- 10:Codec1 GOF Header
- 11 ~:Codec1 reserved for future use

(2) if pcc_codec_type == Codec 2

- 0:Codec2 DataA
- 1:Codec2 MetaDataA
- 2:Codec2 MetaDataB
- 3 ~:Codec2 reserved for future use

FIG. 40

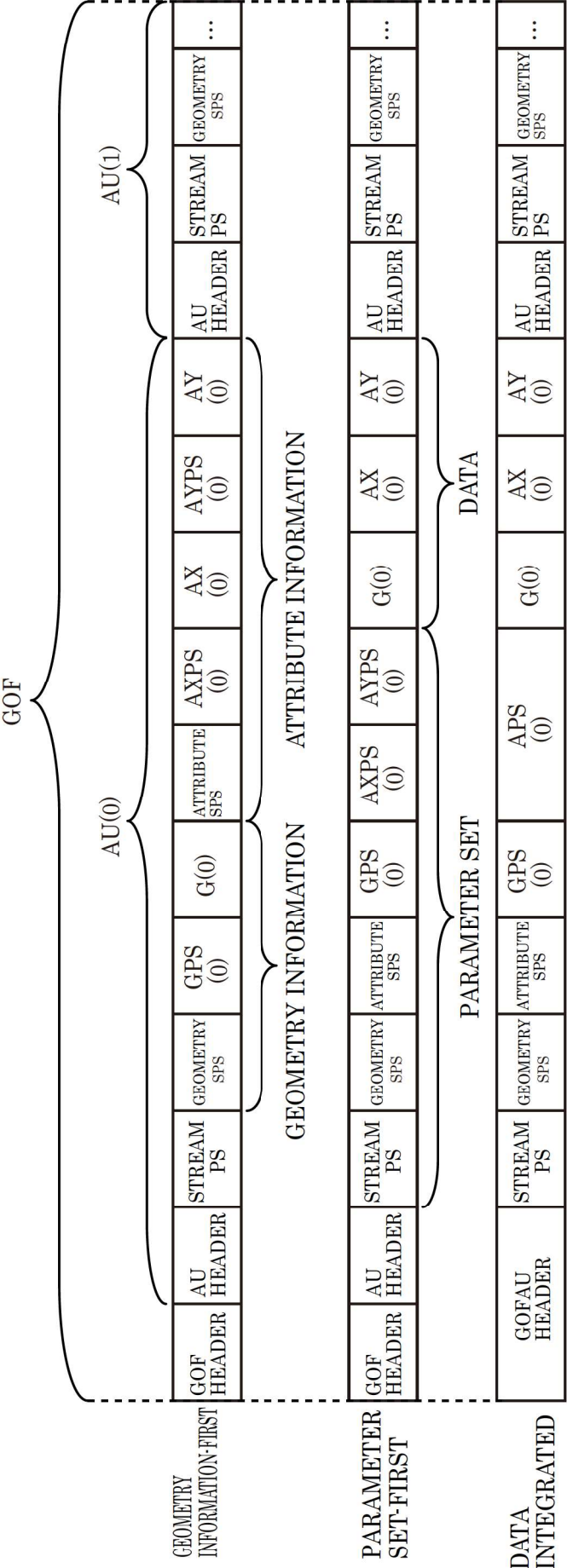


FIG. 41

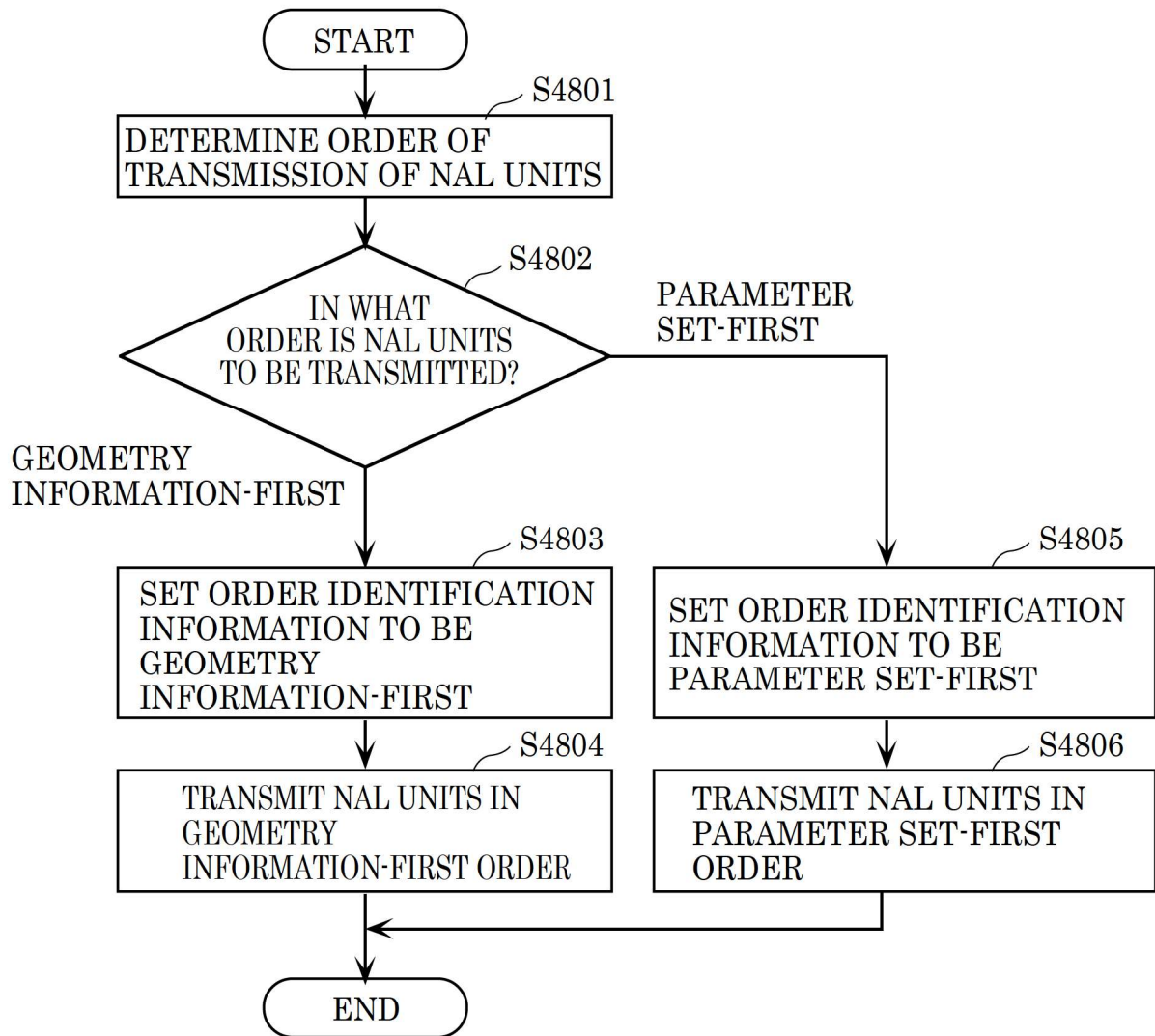


FIG. 42

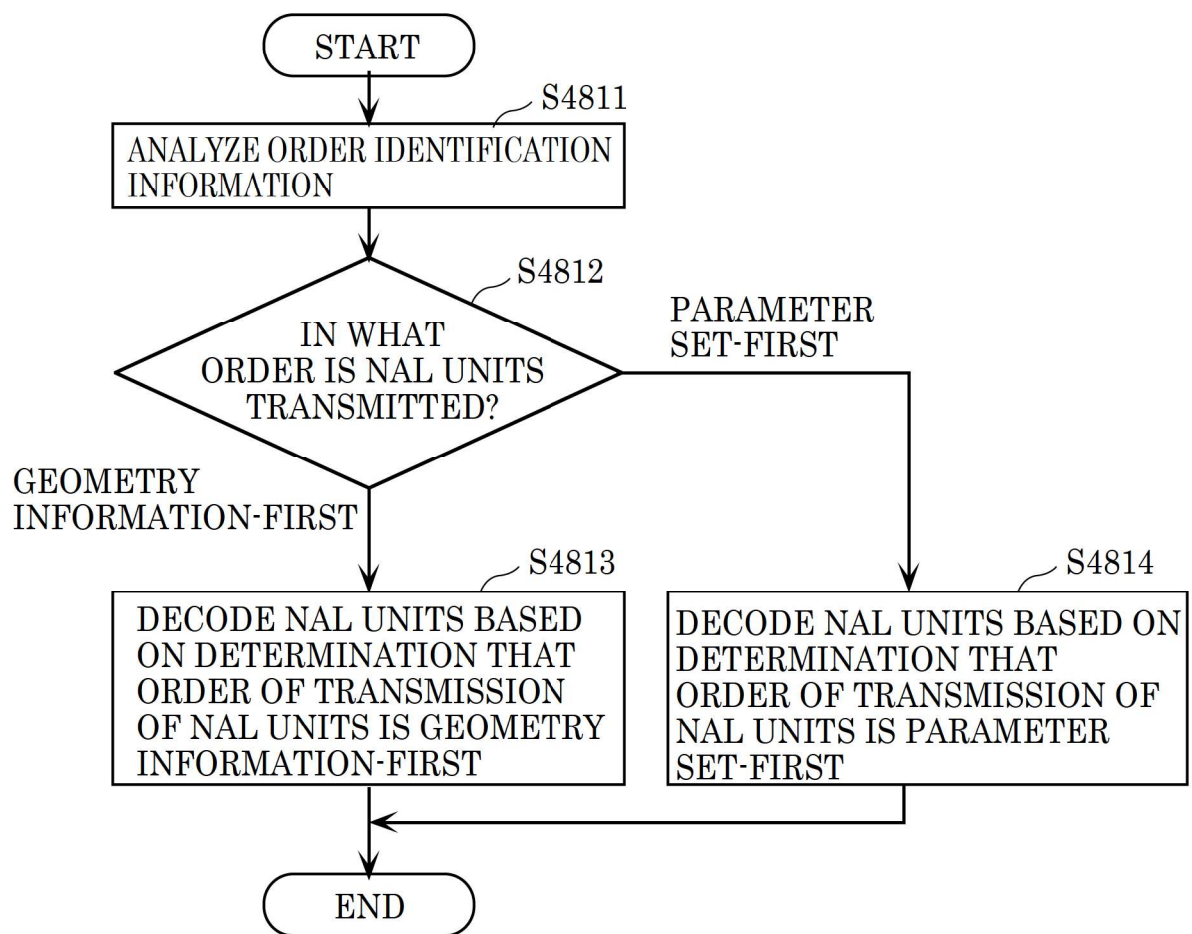


FIG. 43

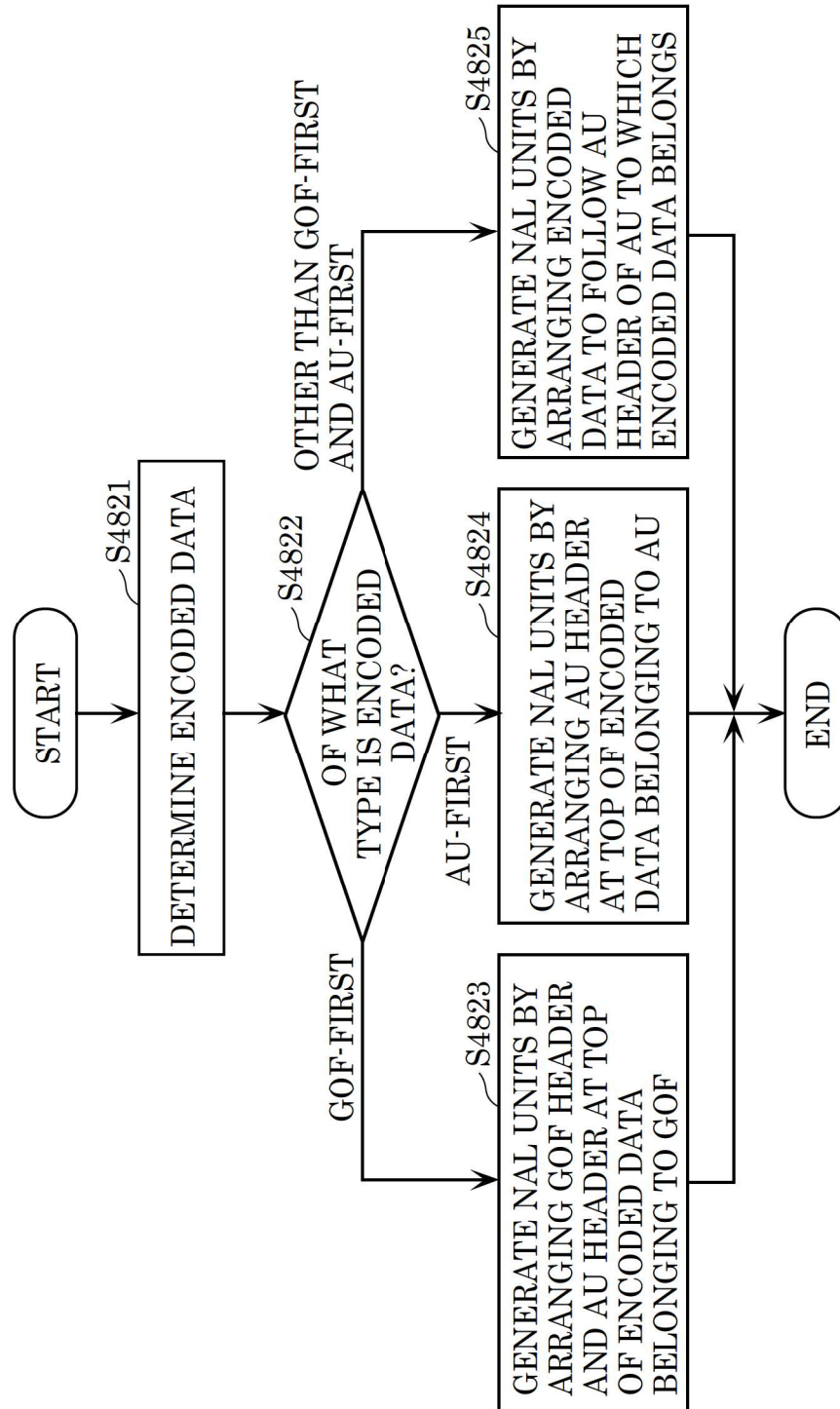


FIG. 44

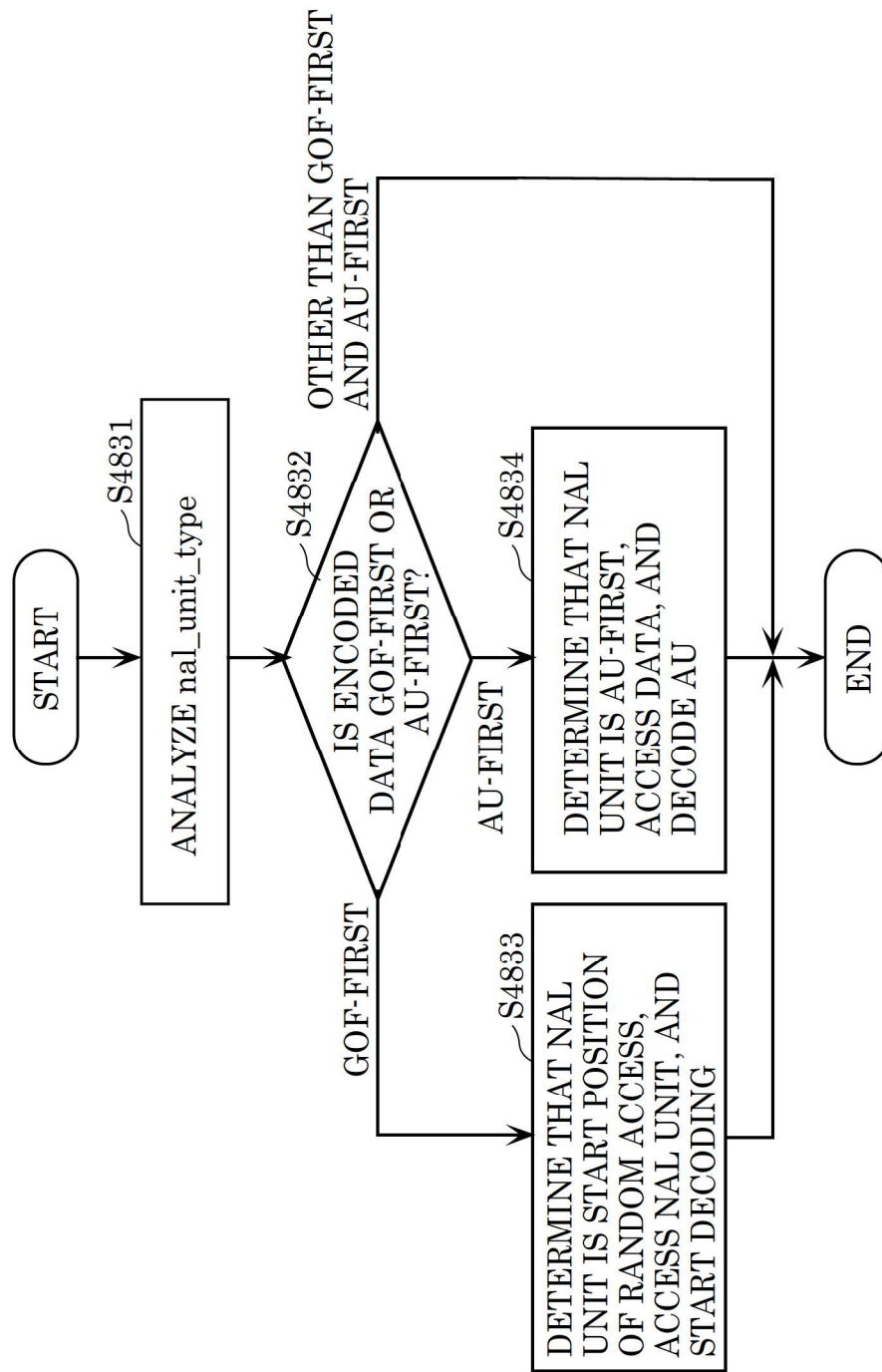


FIG. 45

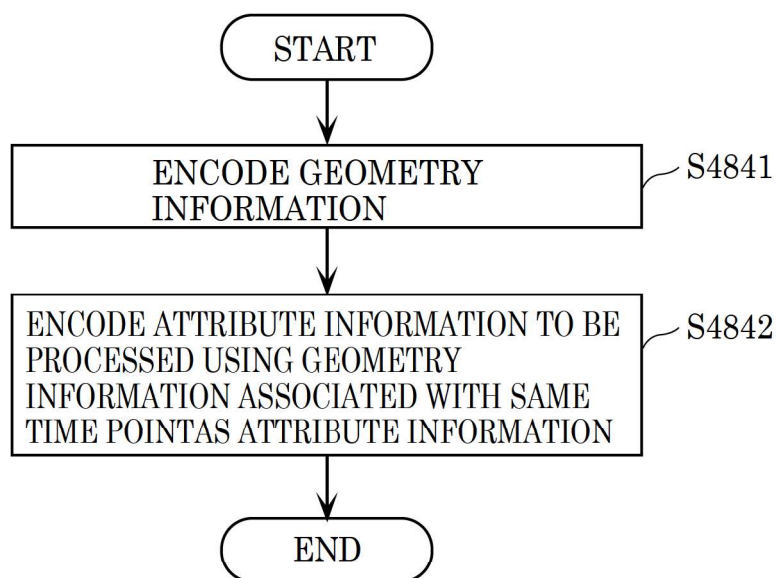


FIG. 46

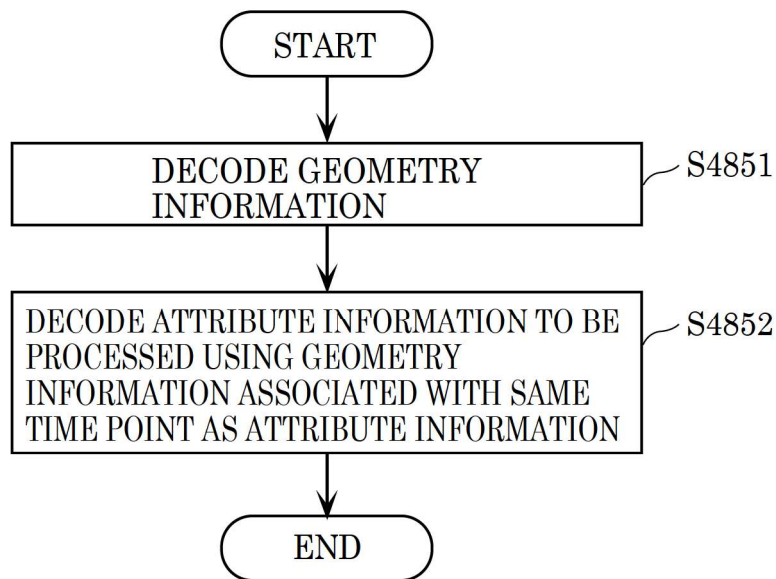


FIG. 47

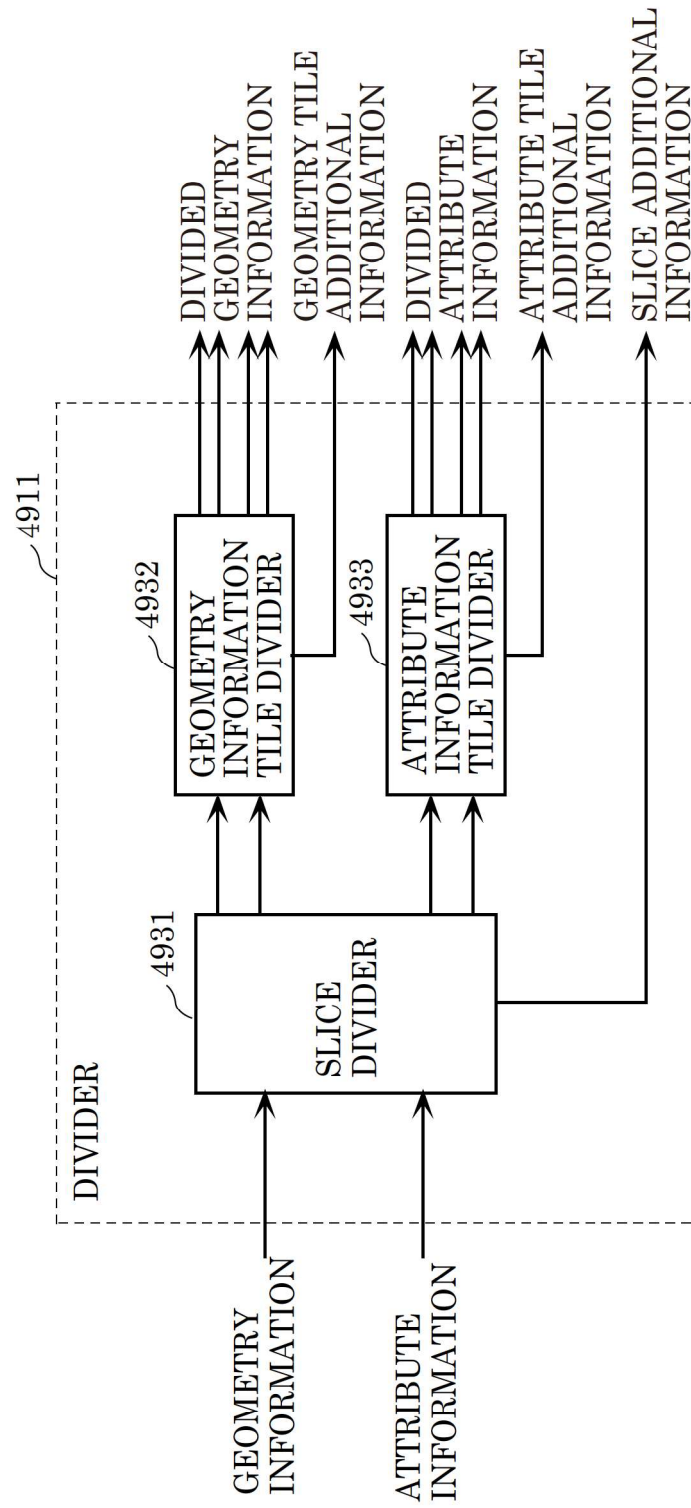


FIG. 48

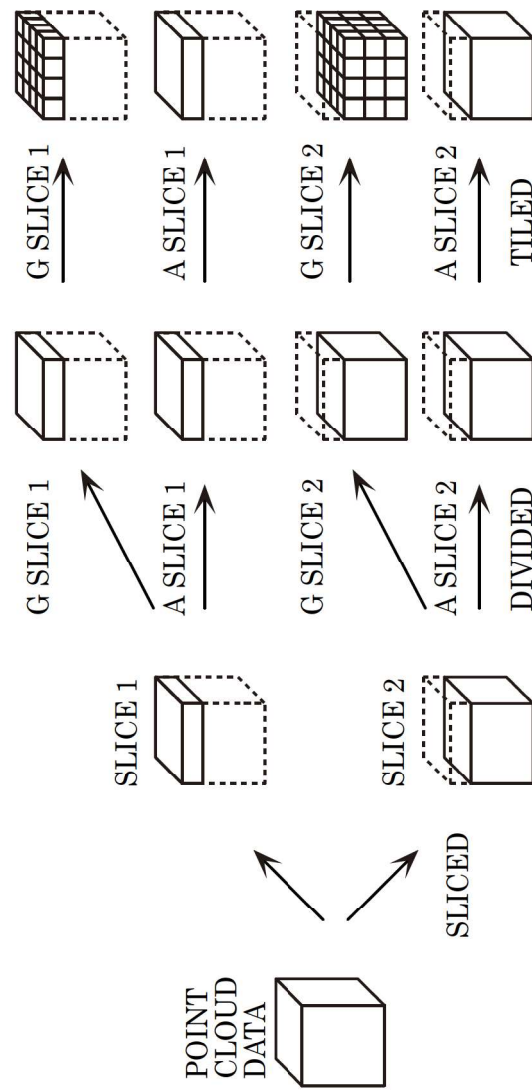


FIG. 49

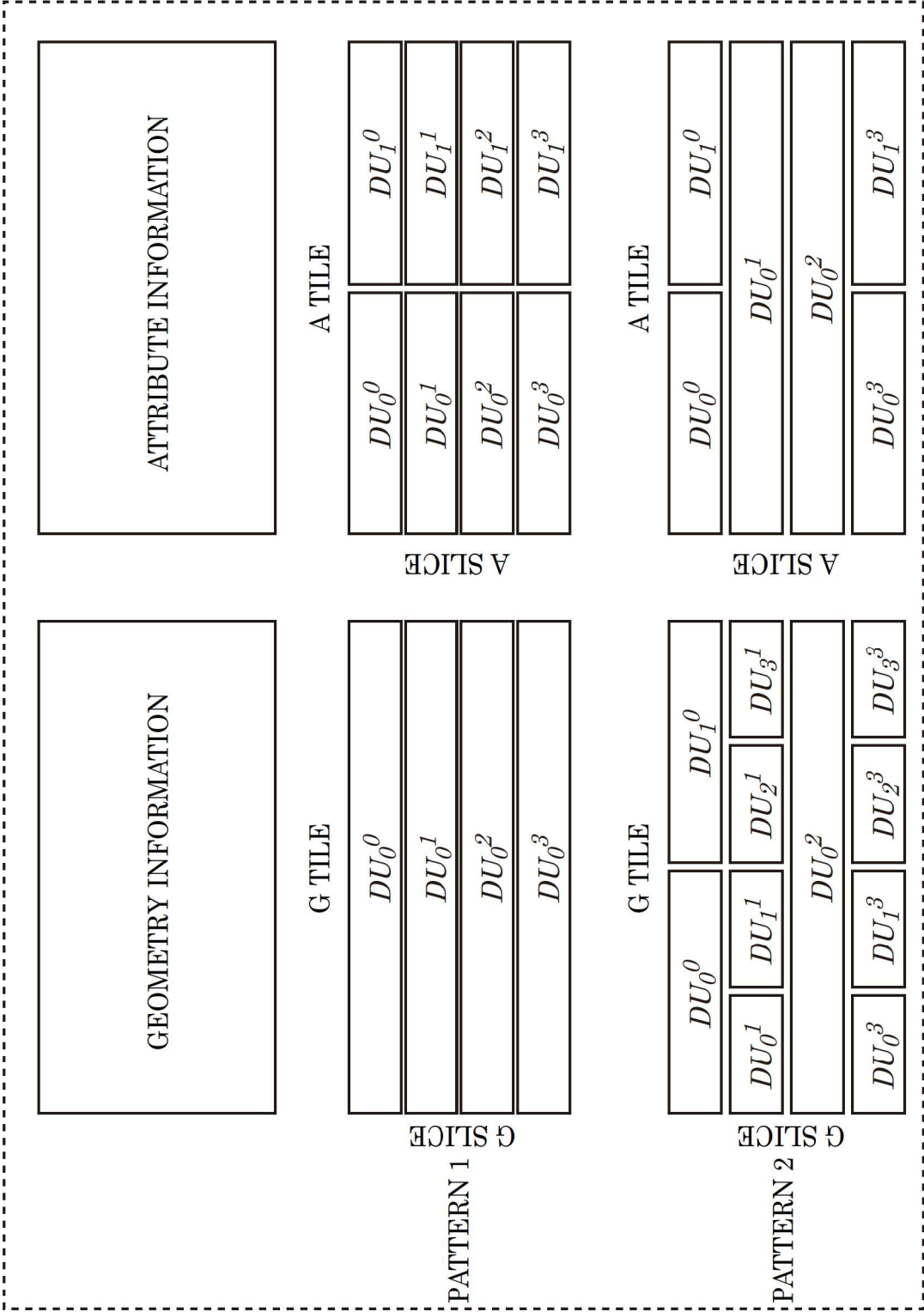


FIG. 50

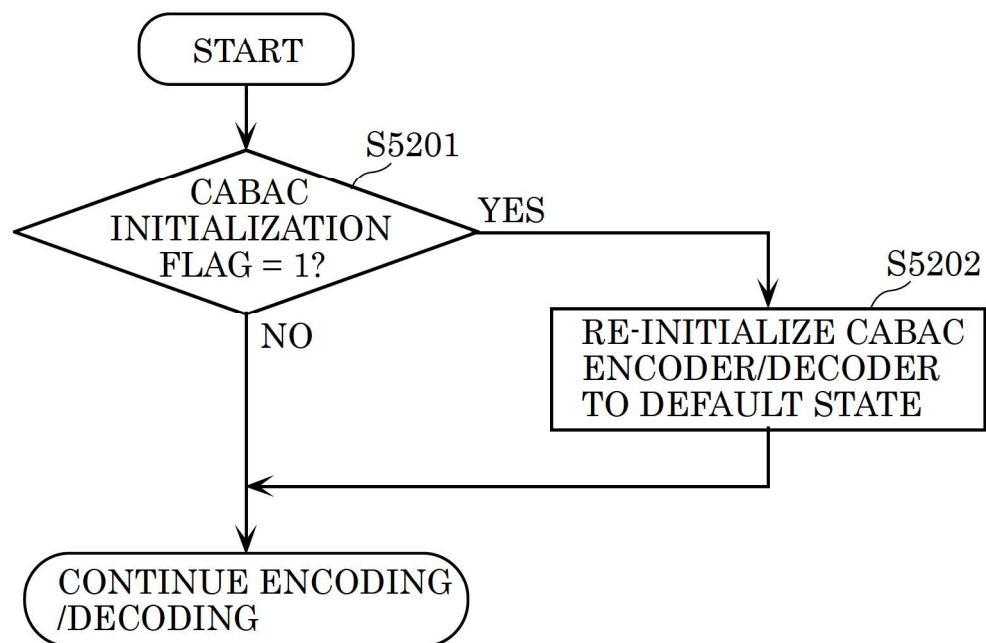


FIG. 51

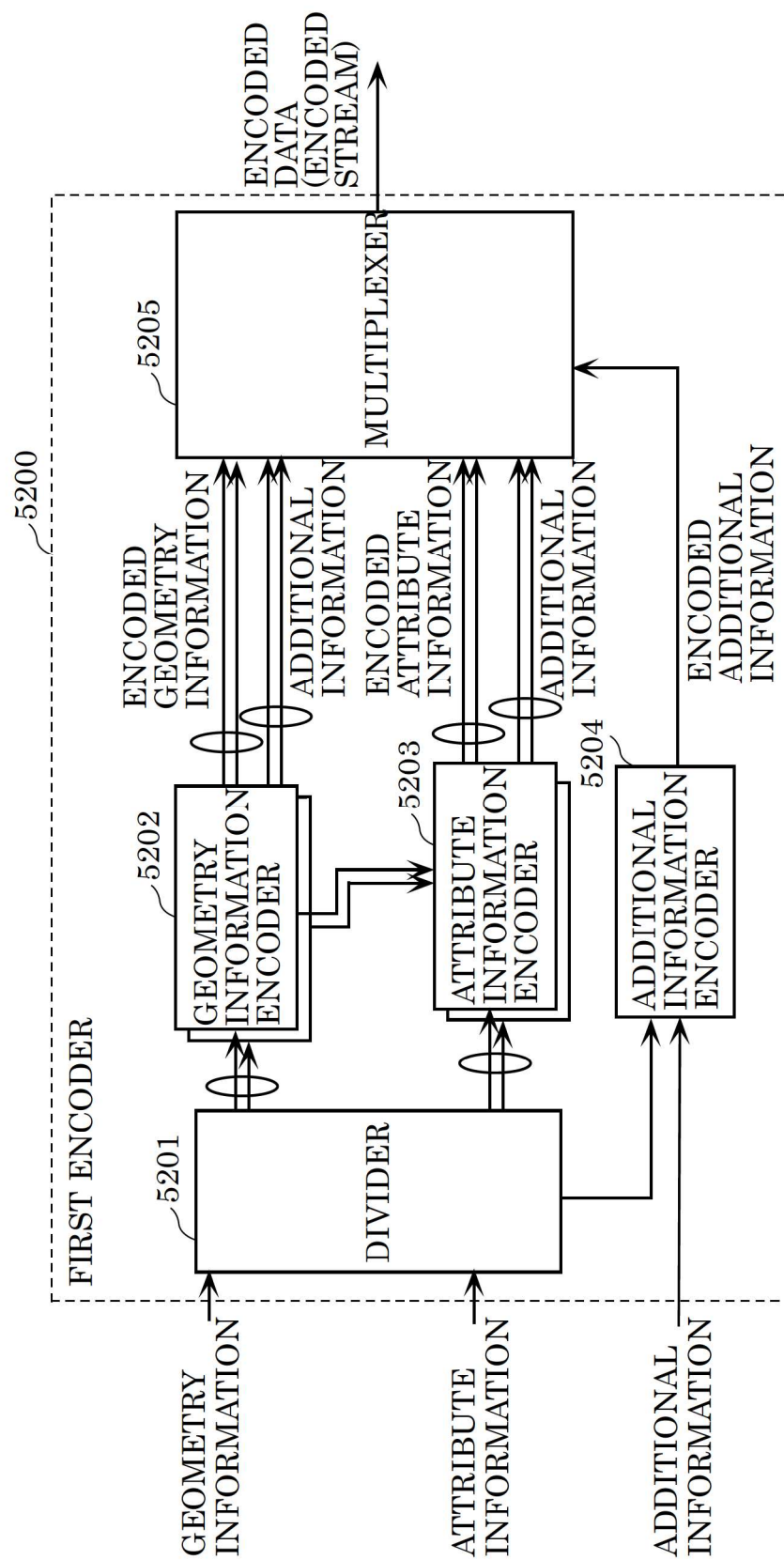


FIG. 52

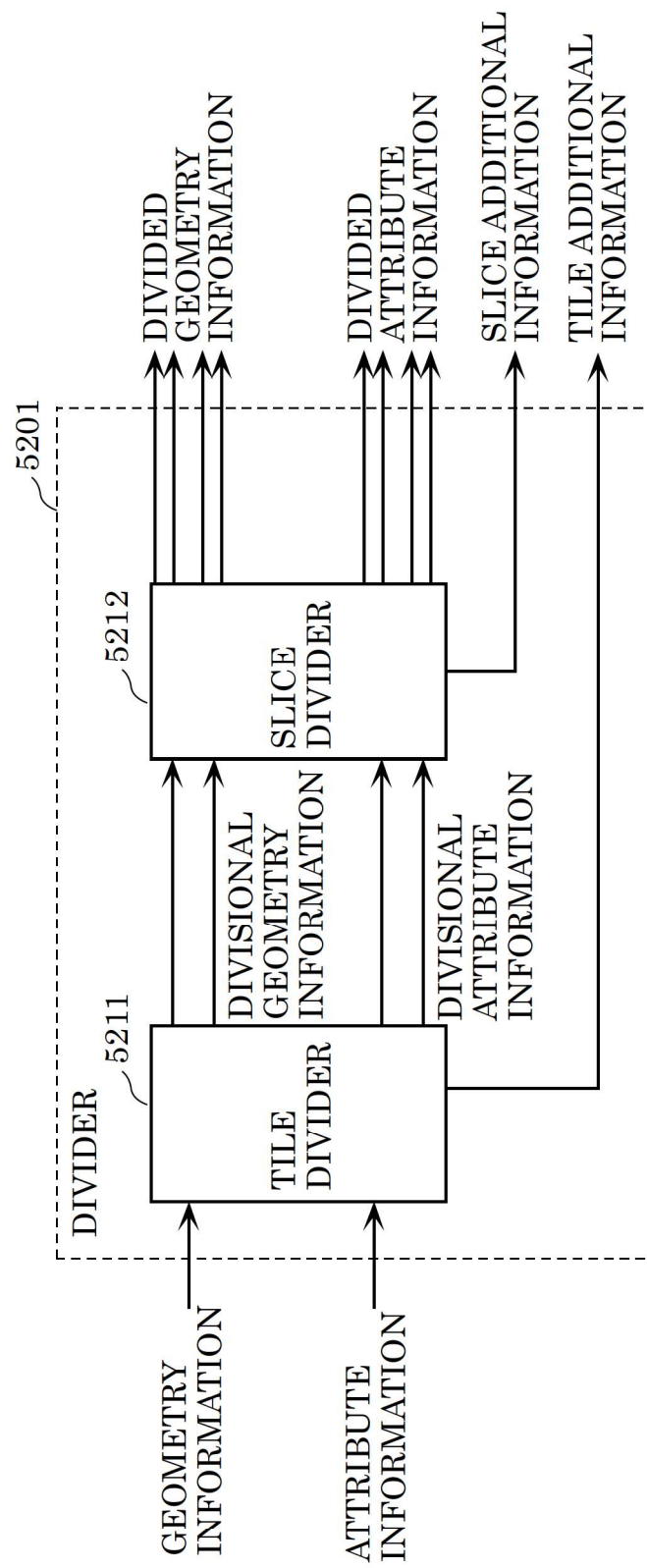


FIG. 53

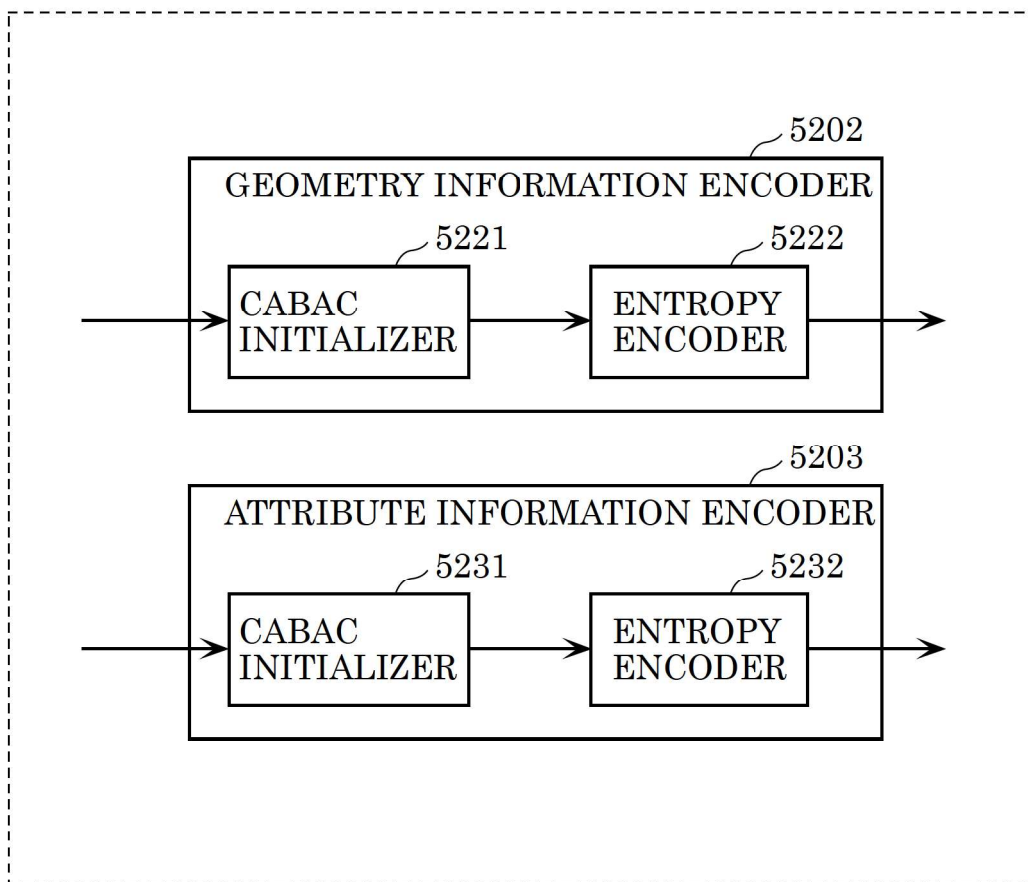


FIG. 54

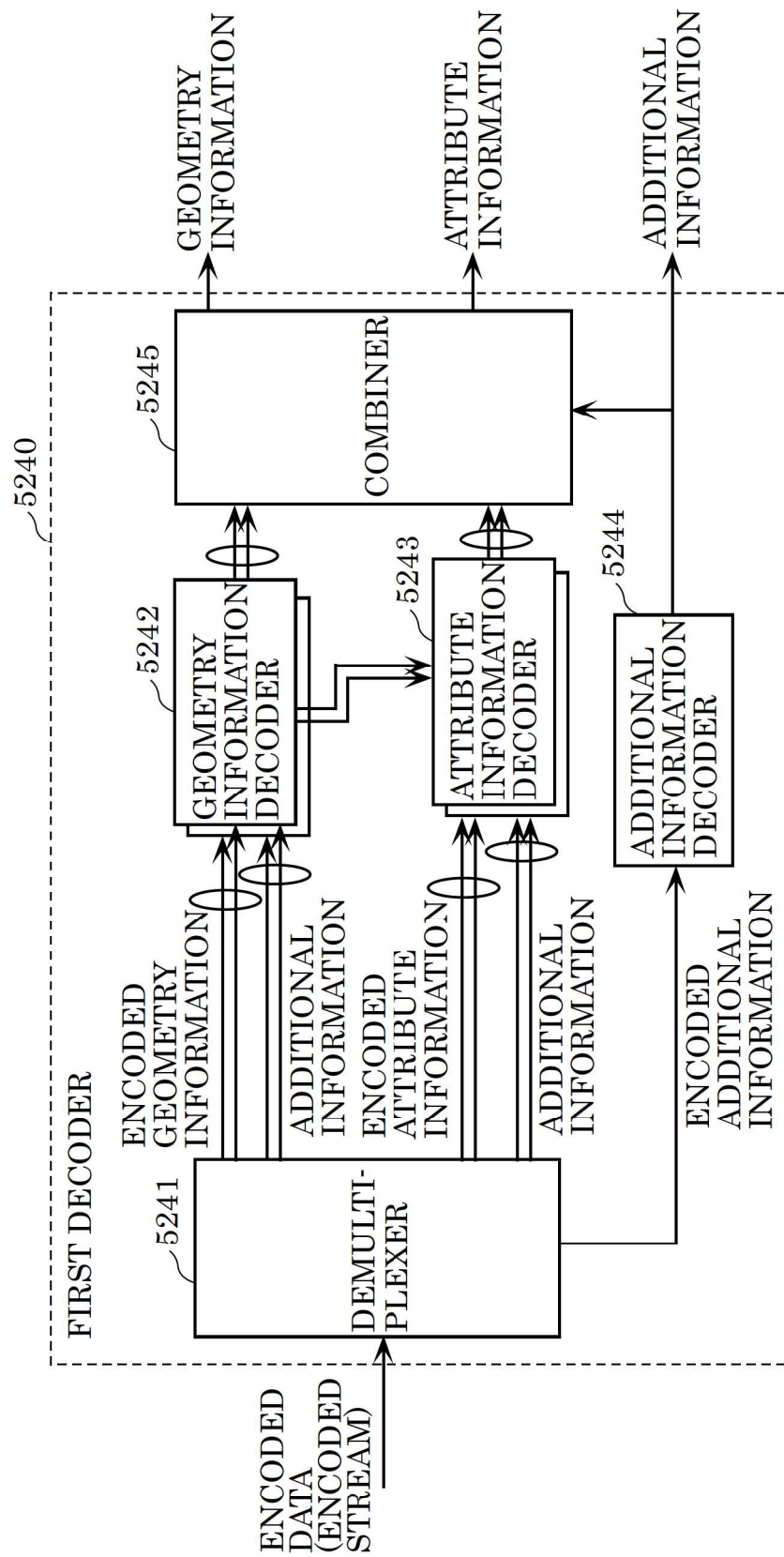


FIG. 55

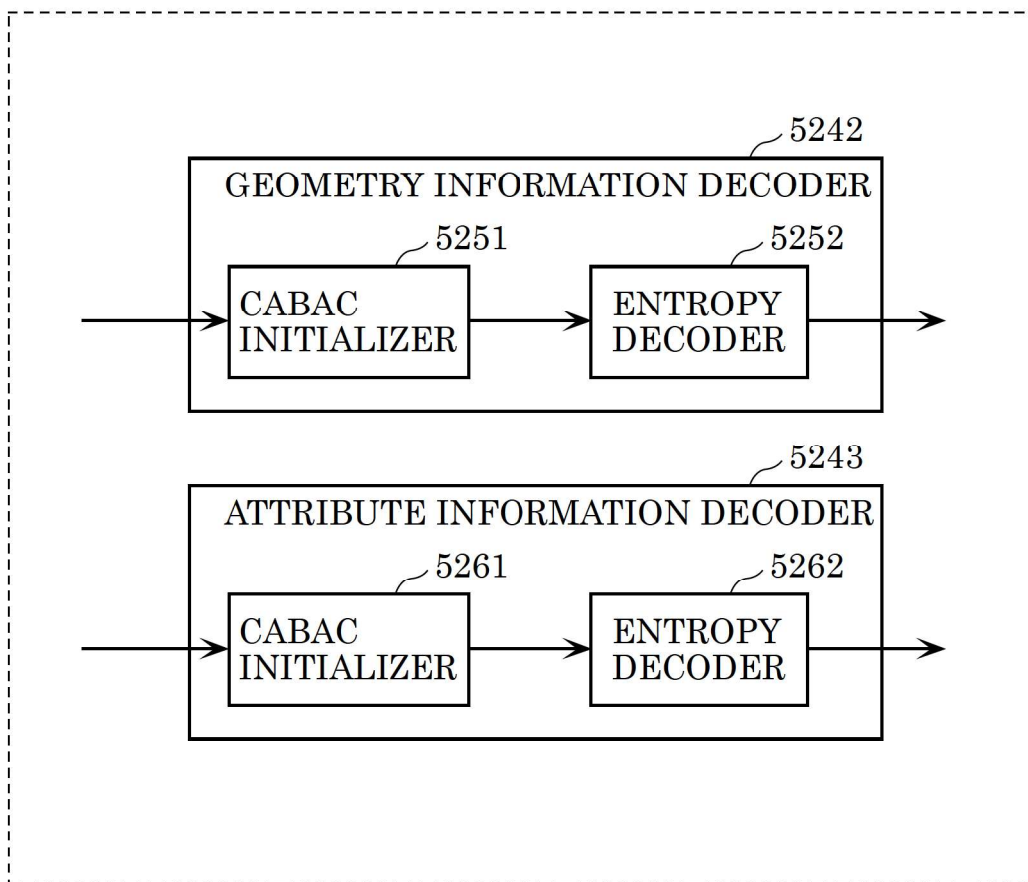


FIG. 56

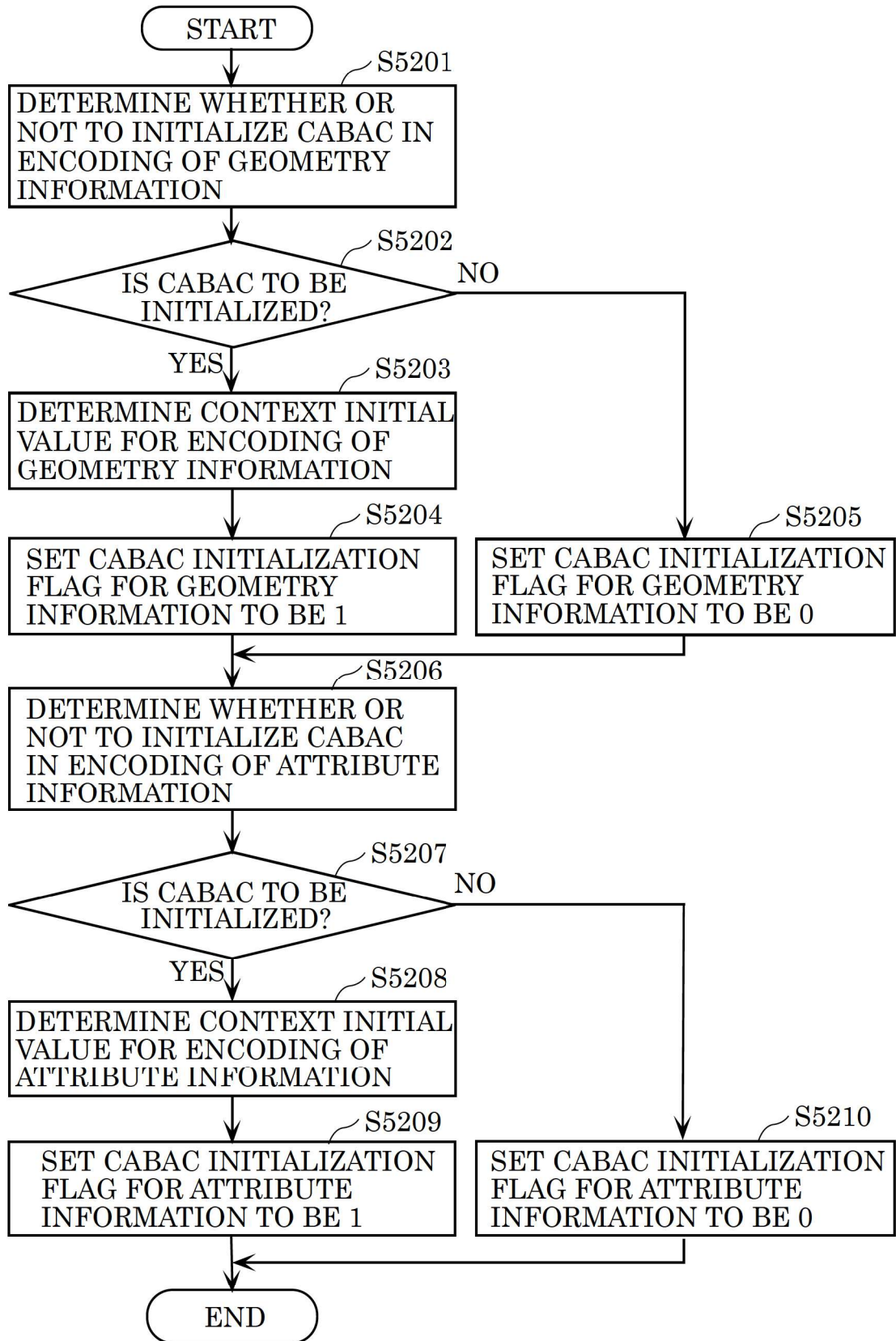


Figure 1 illustrates the proposed GOF and AU structure. The diagram is divided into three parts: (a), (b), and (c).

(a) GOF structure: The GOF is composed of AU(0) and AU(1). AU(0) contains the following fields: GOF Header, AU Header, PCC Stream PS, Geom. Seq. PS, Geom. PS(0), Geometry (0), Attr. Seq. PS, Attr. PS (0), Attr. PS (0), AttributeX (0), Attr. PS (0), AttributeY (0), GOF Header, AU Header, PS, Geometry (1), AttributeX (1), and AttributeY (1). AU(1) contains the following fields: GOF Header, AU Header, PS, Geometry (1), AttributeX (1), and AttributeY (1). Arrows indicate the timing of initialization for each field.

(b) GOF structure: The GOF is composed of AU(0), AU(1), and AU(2). AU(0) contains the following fields: GOF Header, AU Header, PCC Stream PS, Geom. Seq. PS, Geom. PS(0), Geometry (0), Attr. Seq. PS, Attr. PS (0), Attr. PS (0), AttributeX (0), Attr. PS (0), AttributeY (0), AU Header, and AU Header. AU(1) contains the following fields: AU Header and AU Header. AU(2) contains the following fields: AU Header. Arrows indicate the timing of initialization for each field.

(c) AU structure: The AU contains the following fields: GOF Header, AU Header, PCC Stream PS, Geom. Seq. PS, Attr. Seq. PS, Gt1, At1, Gt2, At2, Gt3, At3, Gt4, and At4. Arrows indicate the timing of initialization for each field.

FIG.58

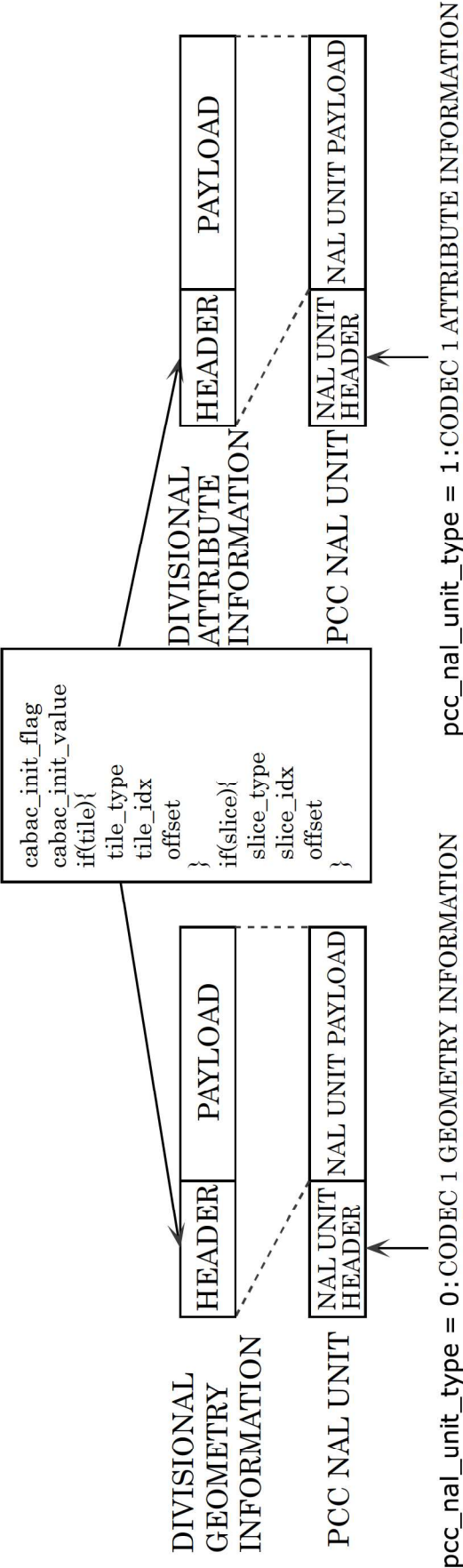


FIG. 59

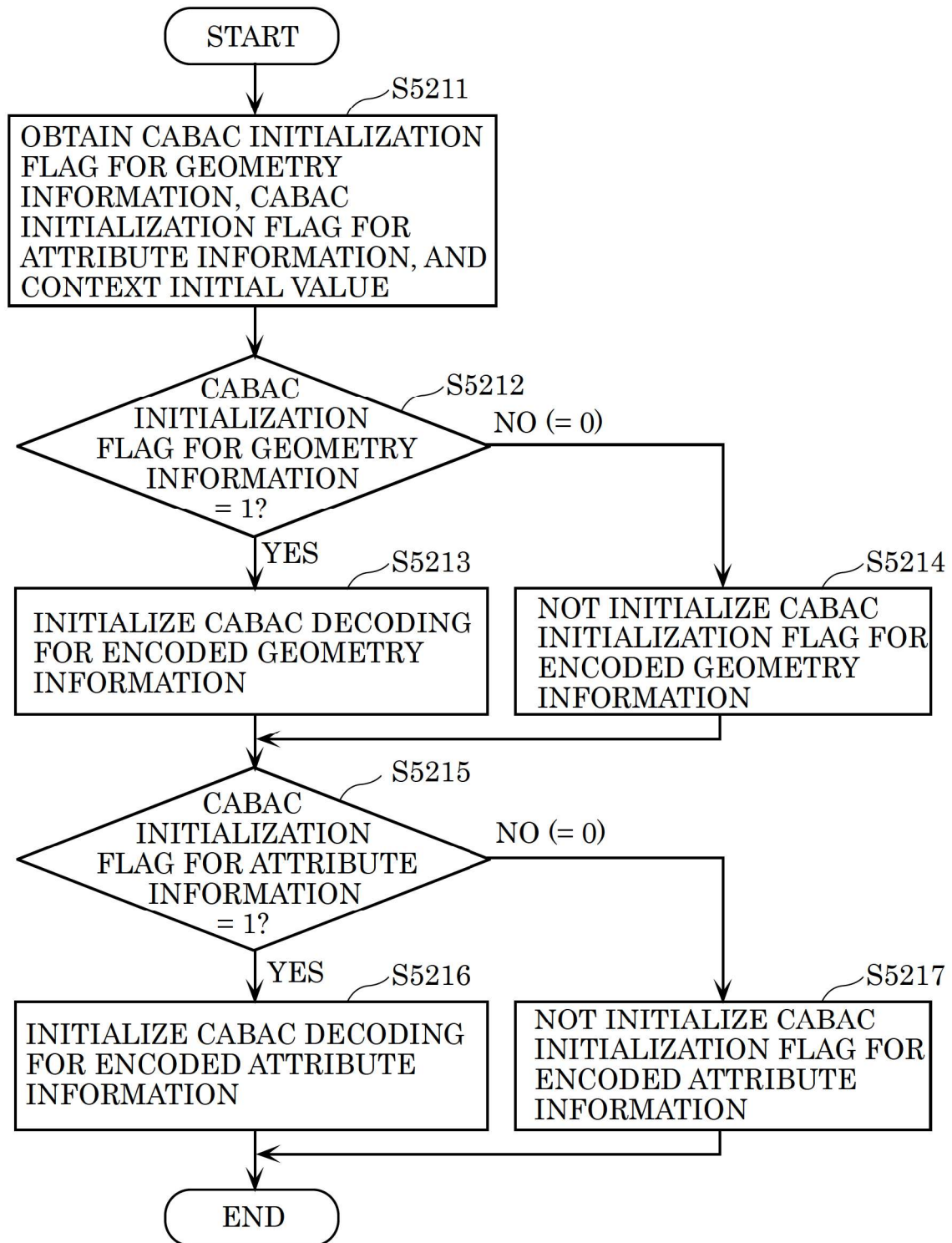


FIG. 60

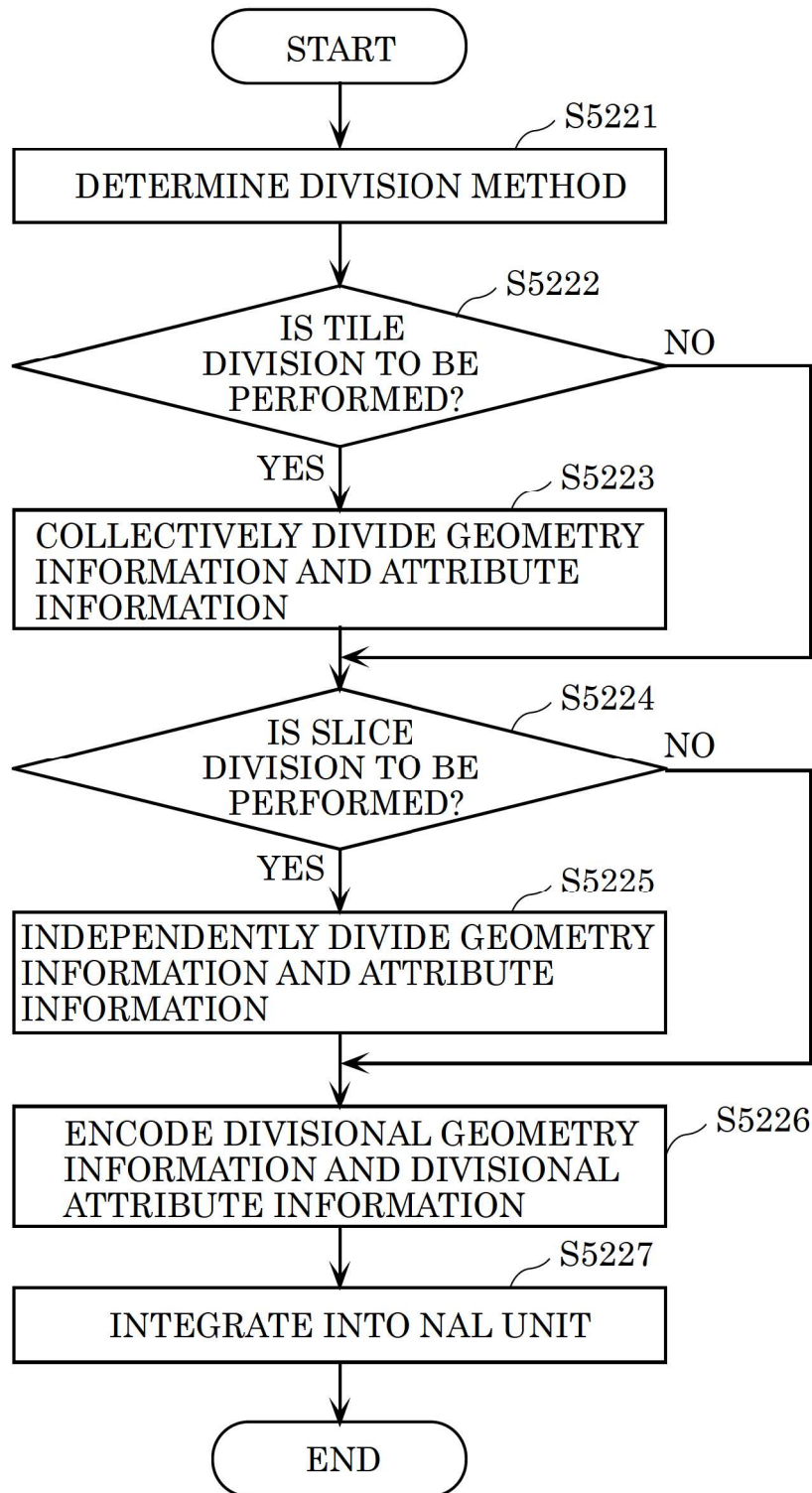


FIG. 61

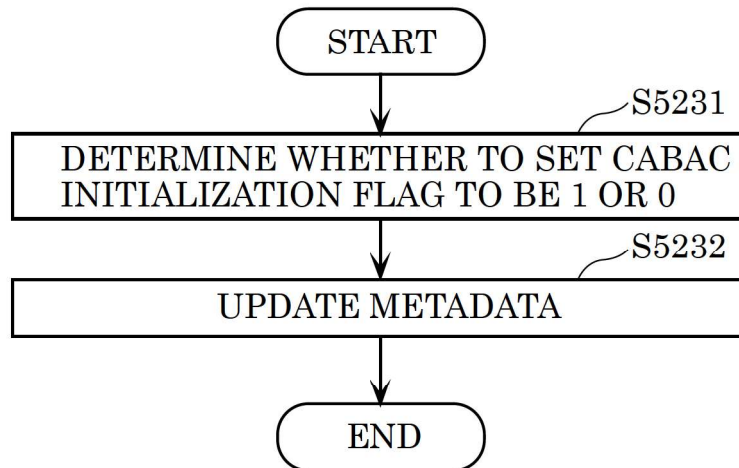


FIG. 62

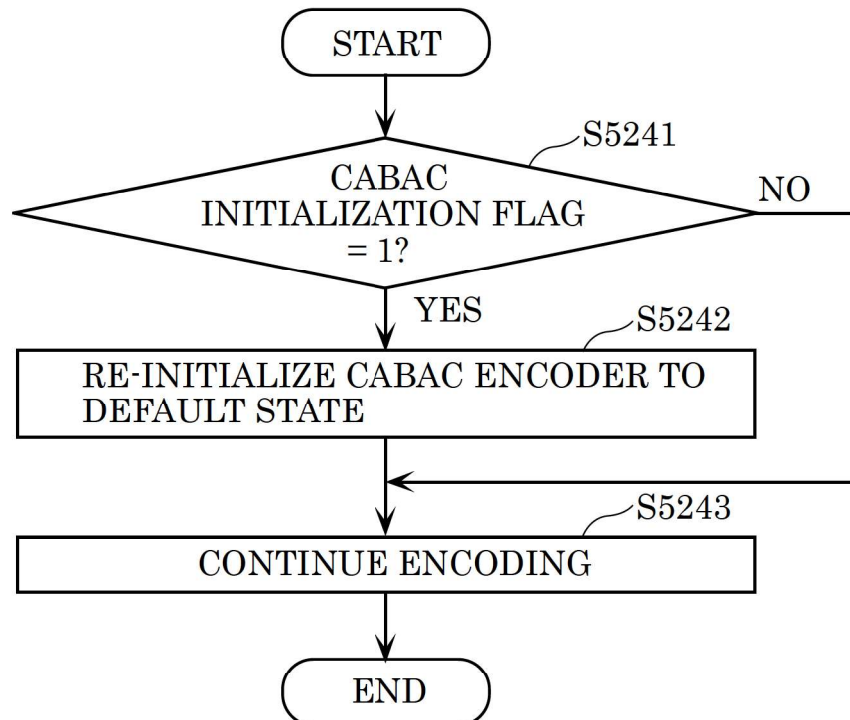


FIG. 63

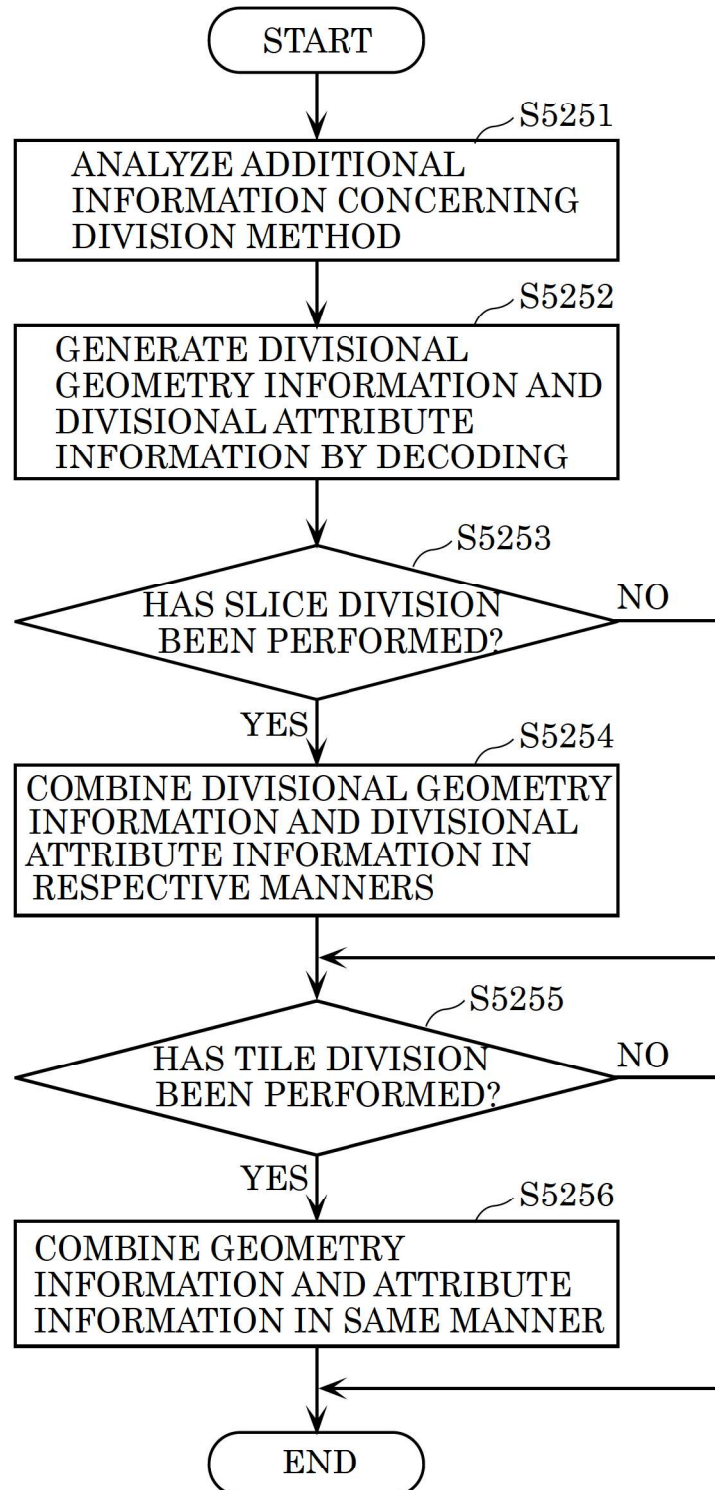


FIG. 64

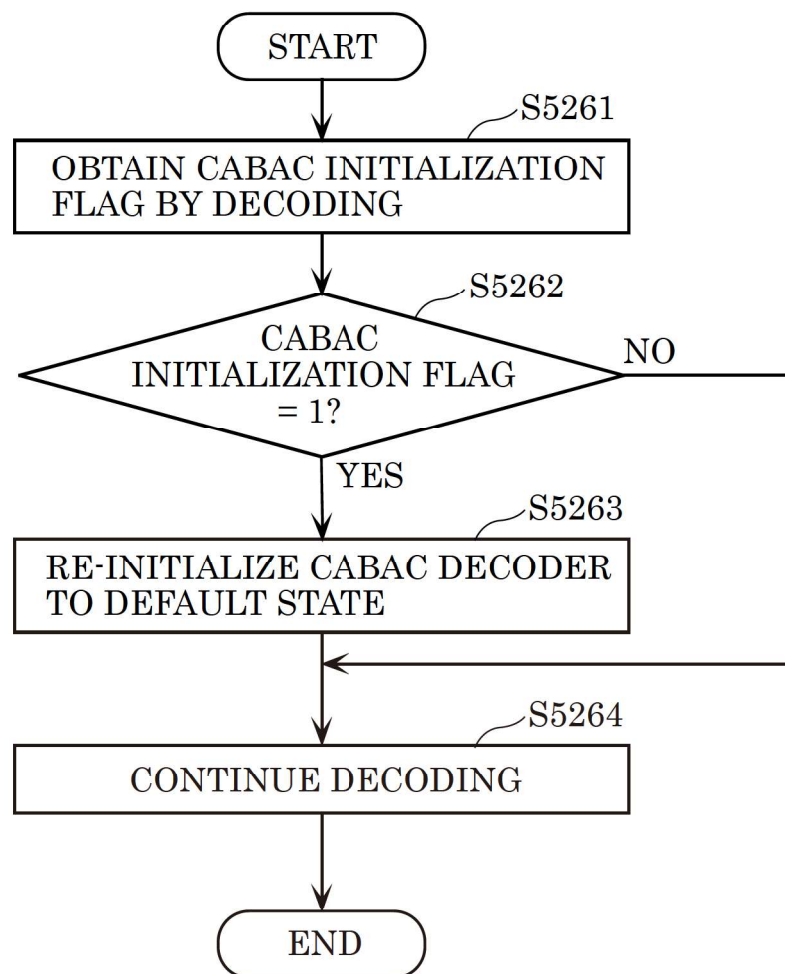


FIG. 65

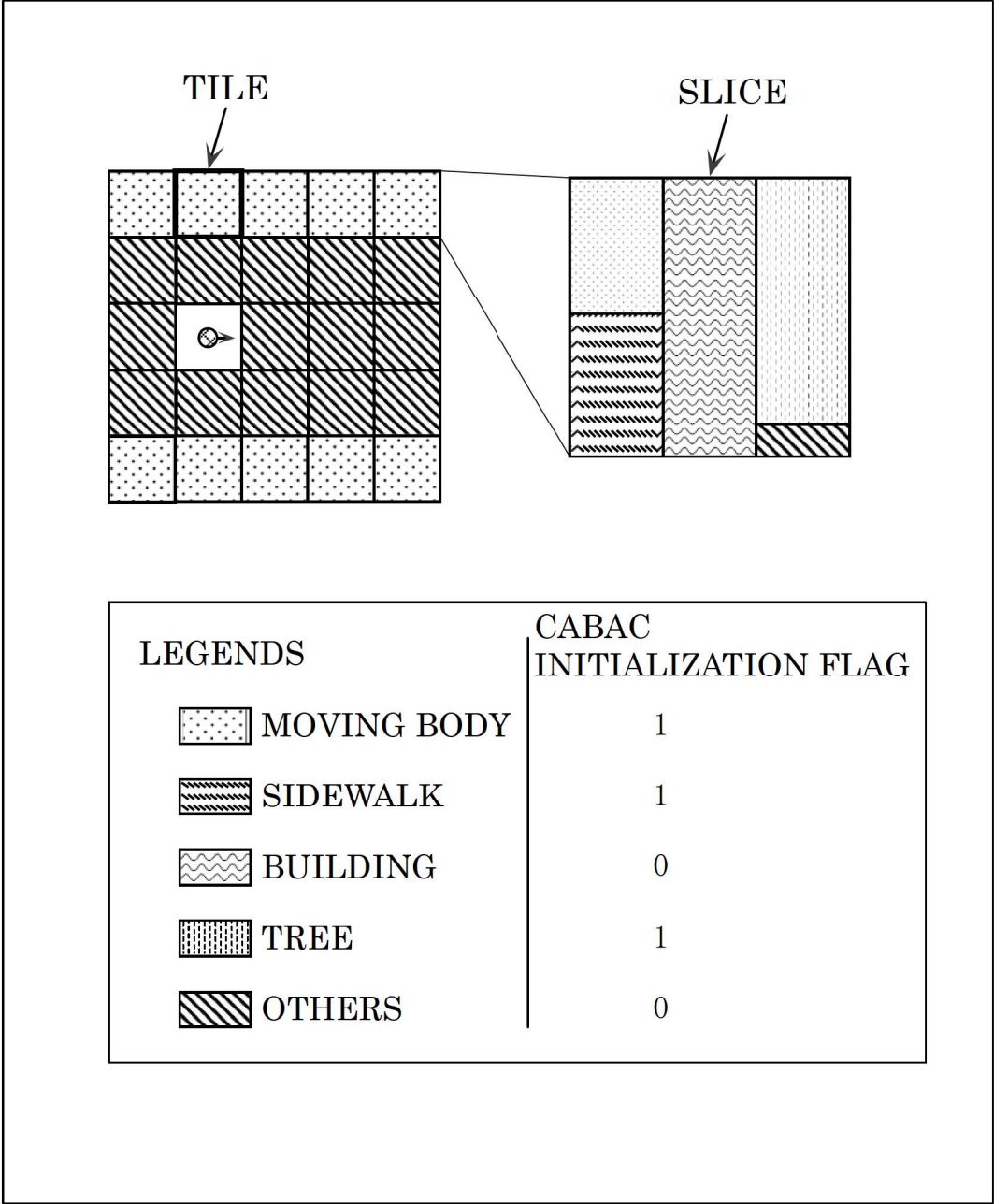


FIG. 66

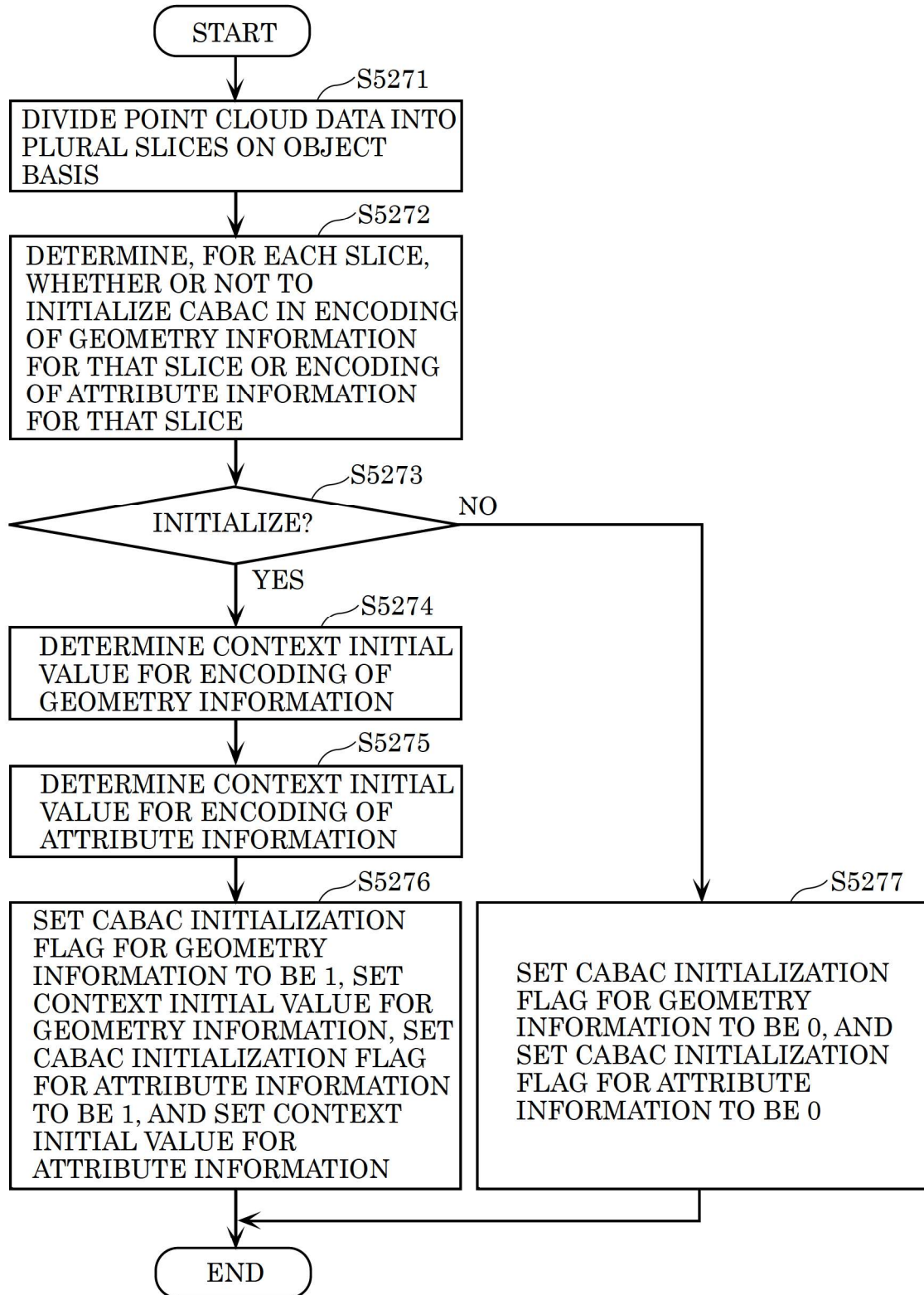


FIG.67

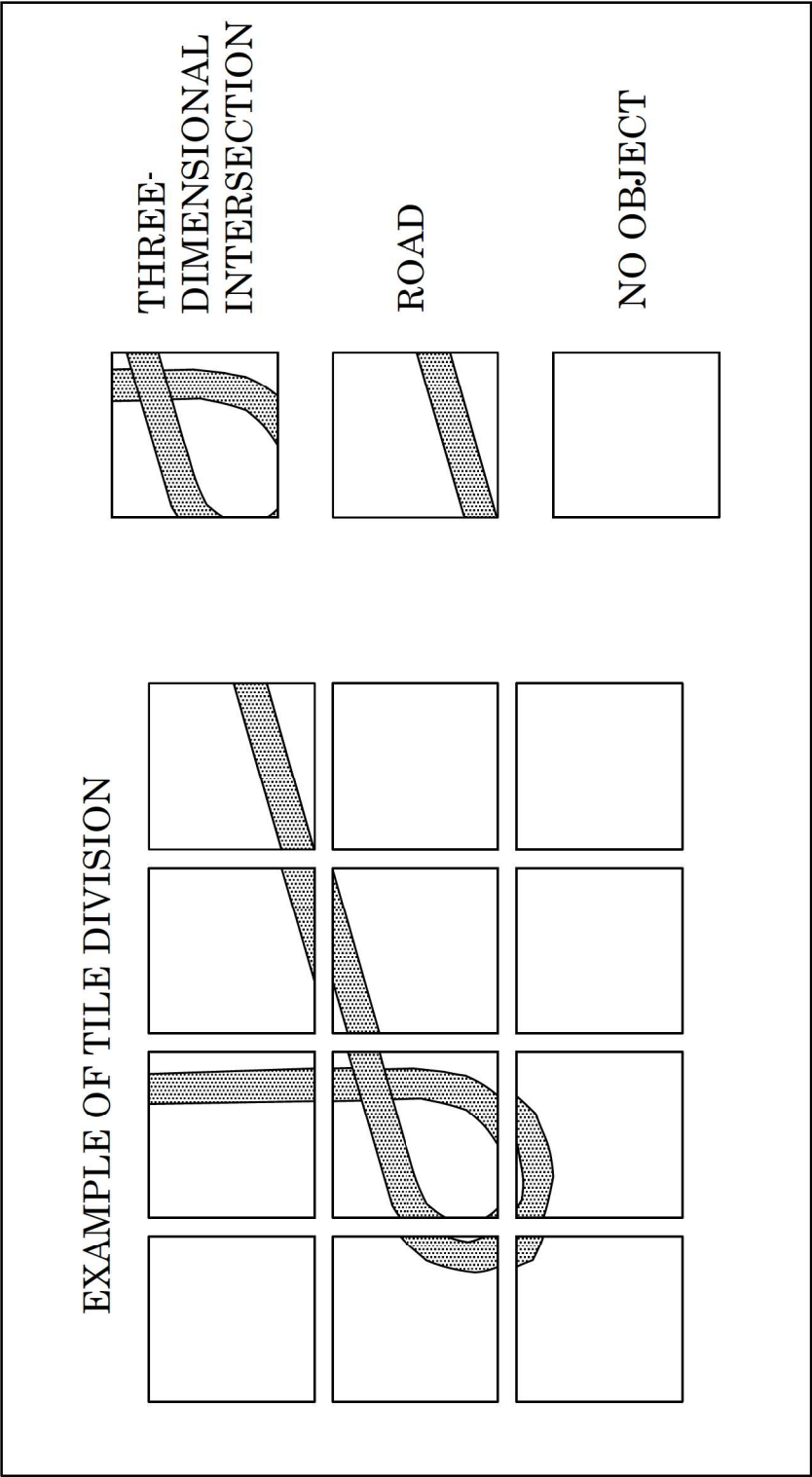


FIG. 68

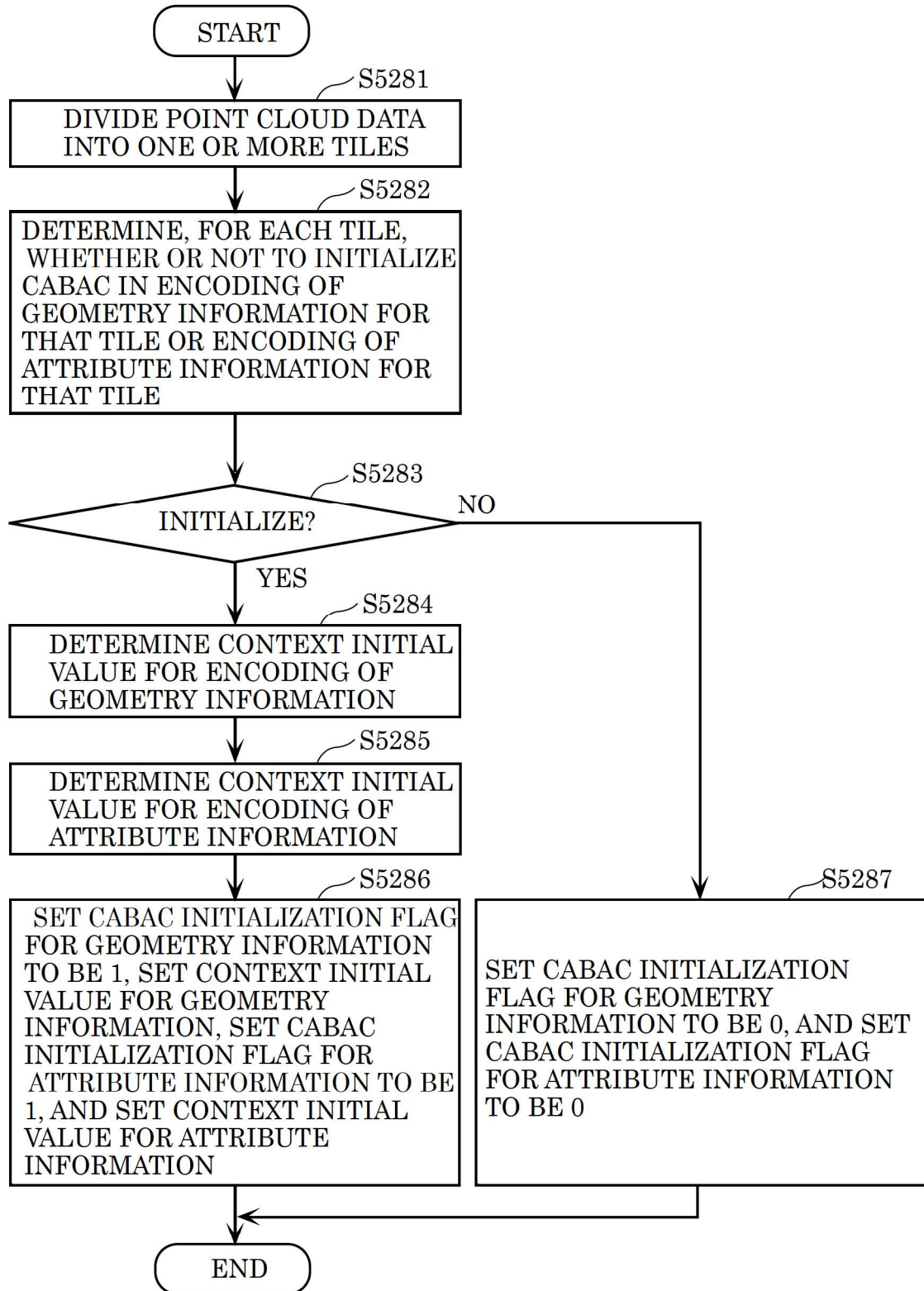


FIG. 69

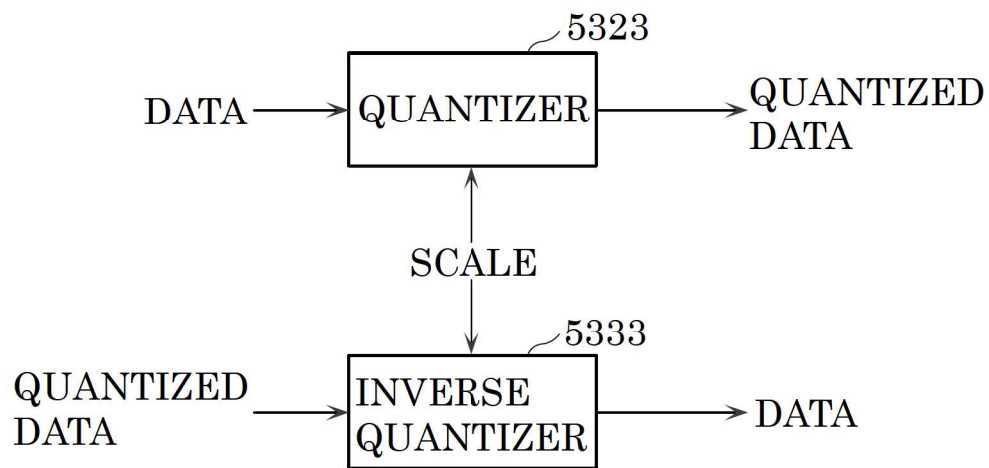


FIG. 70

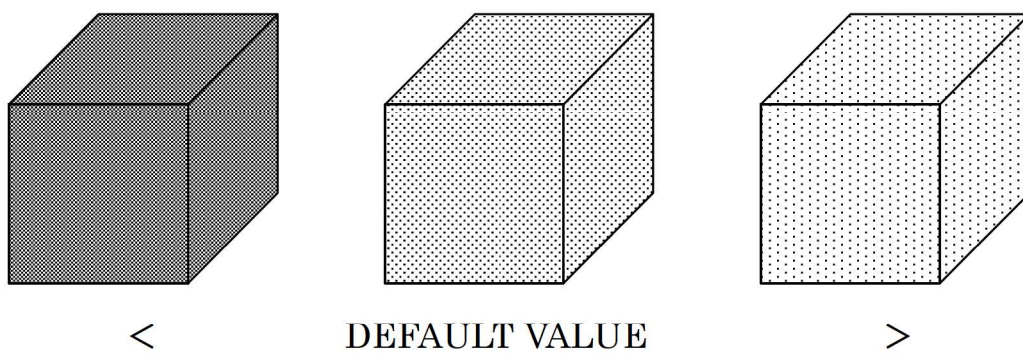


FIG. 71

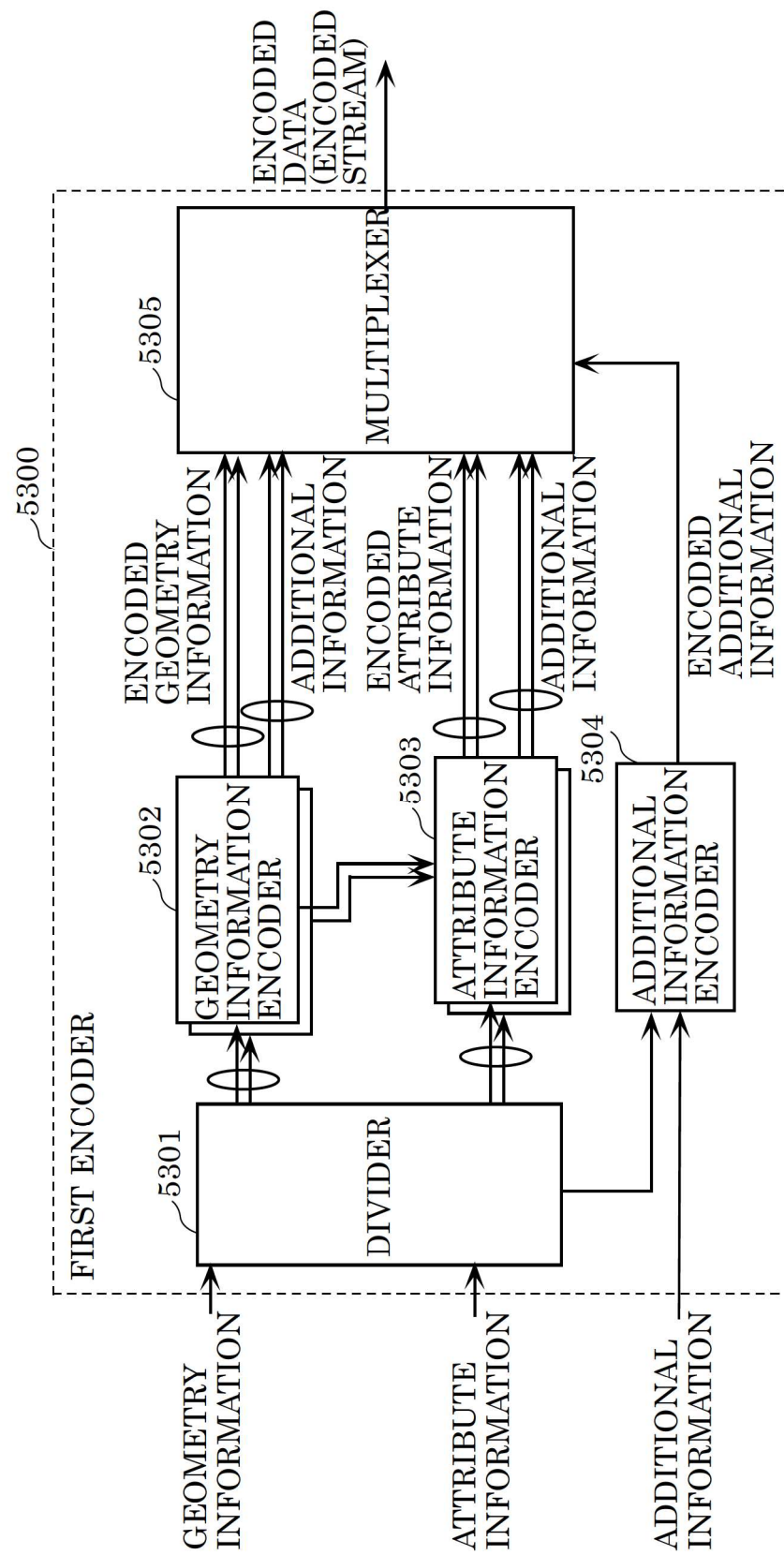


FIG. 72

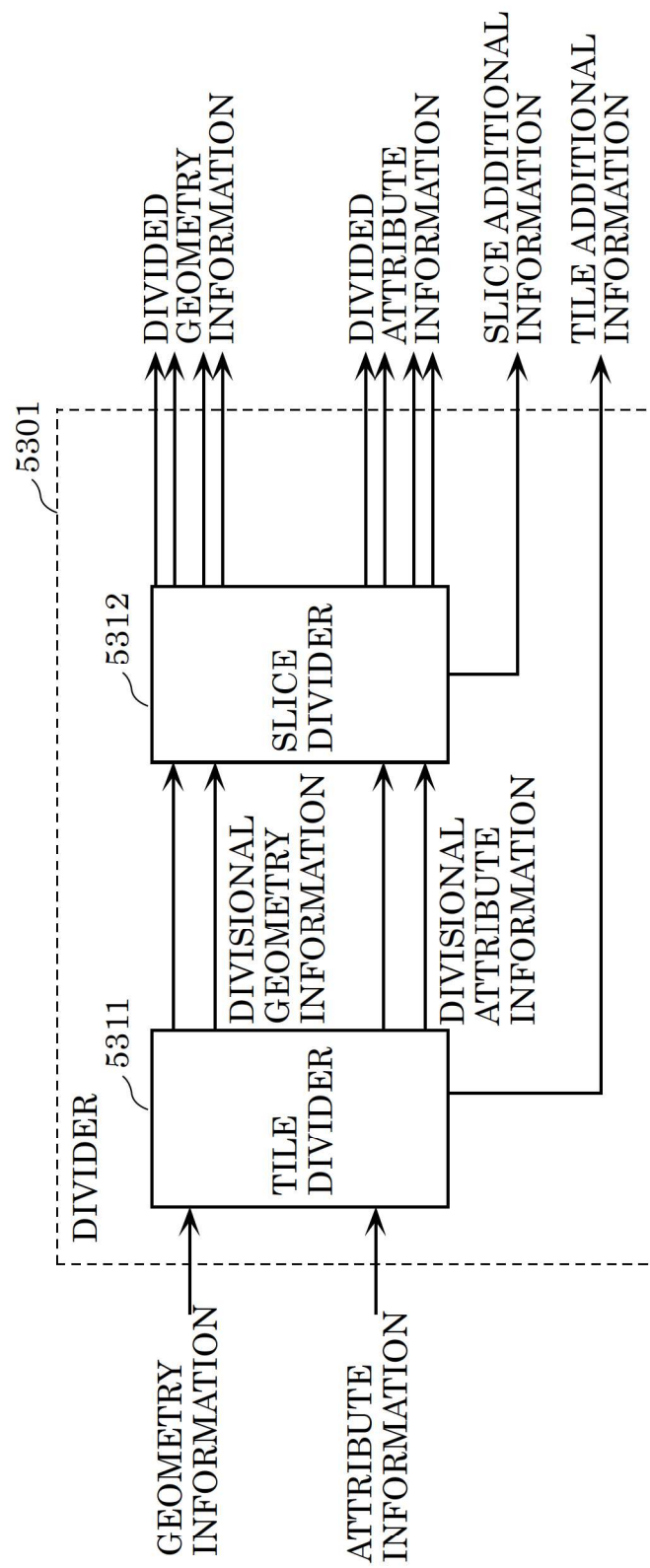


FIG. 73

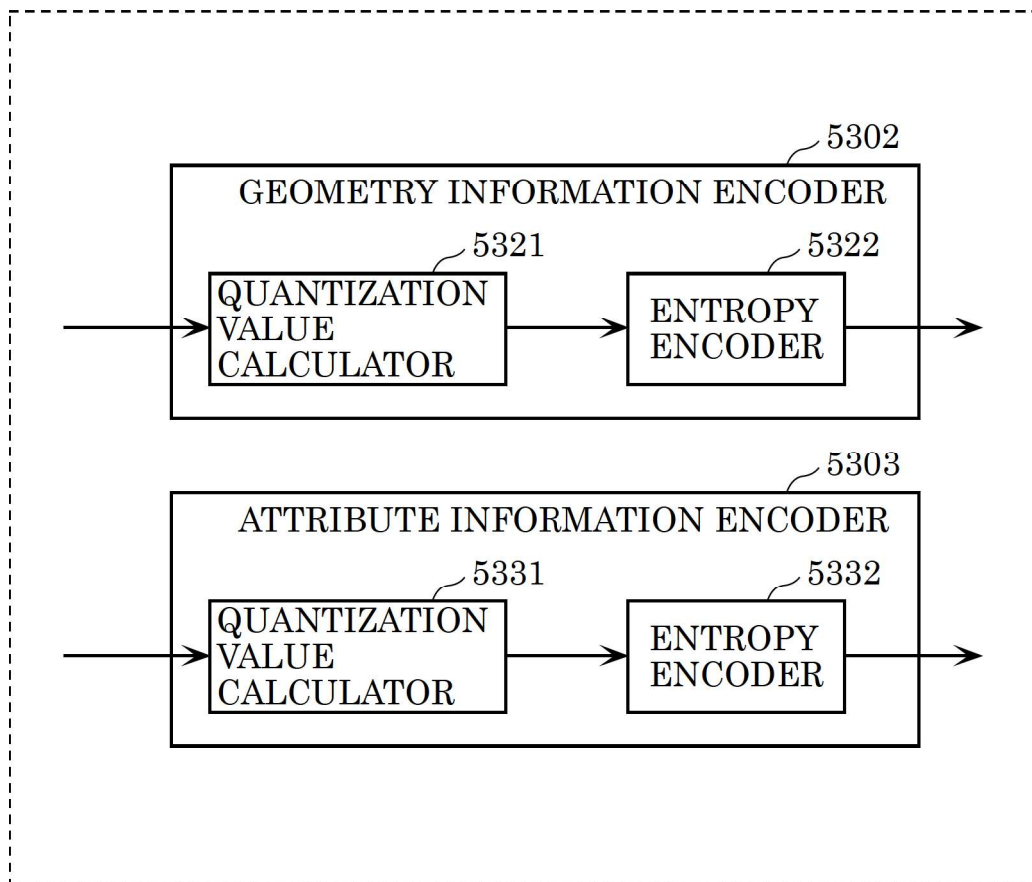


FIG. 74

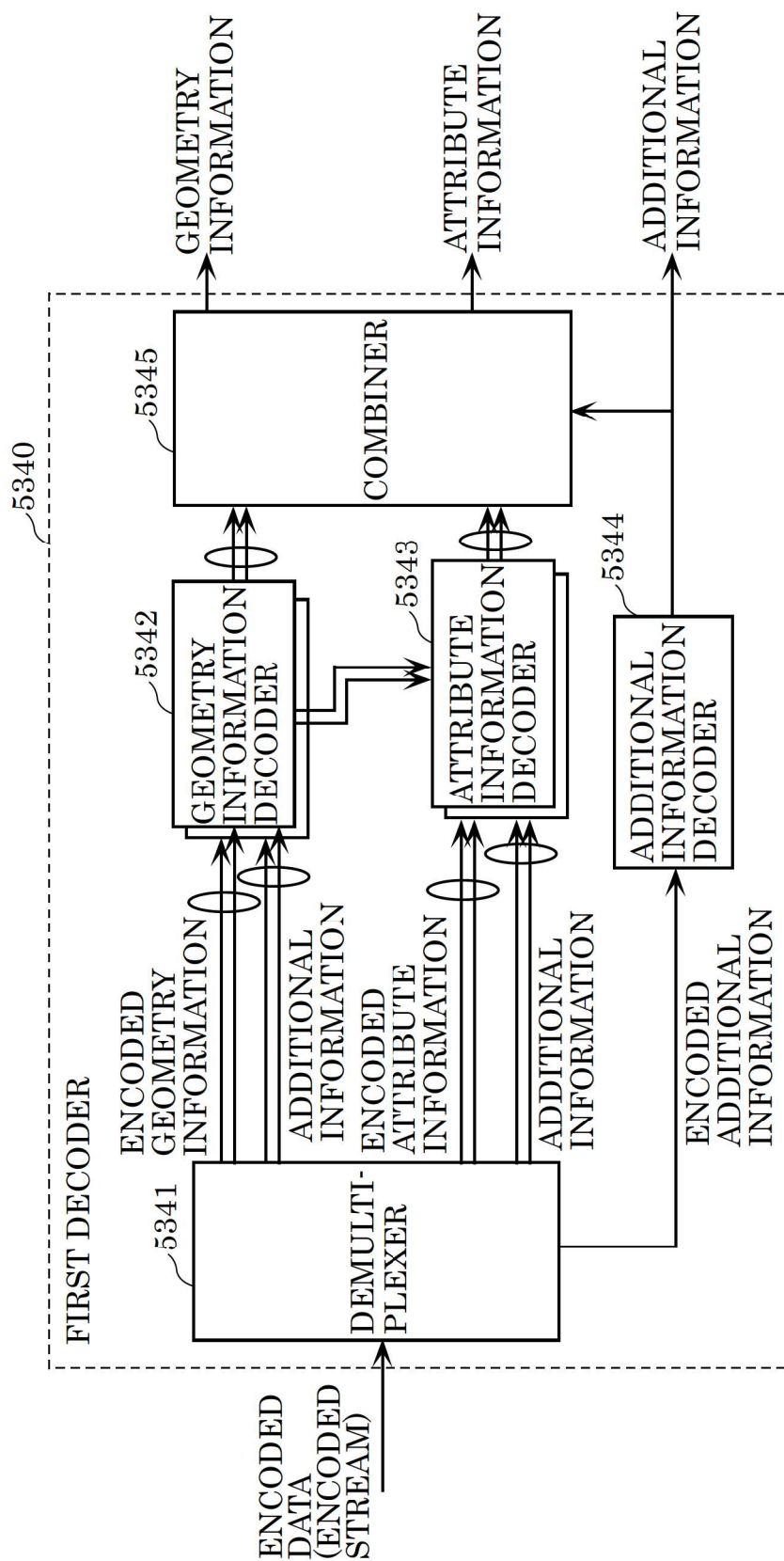


FIG. 75

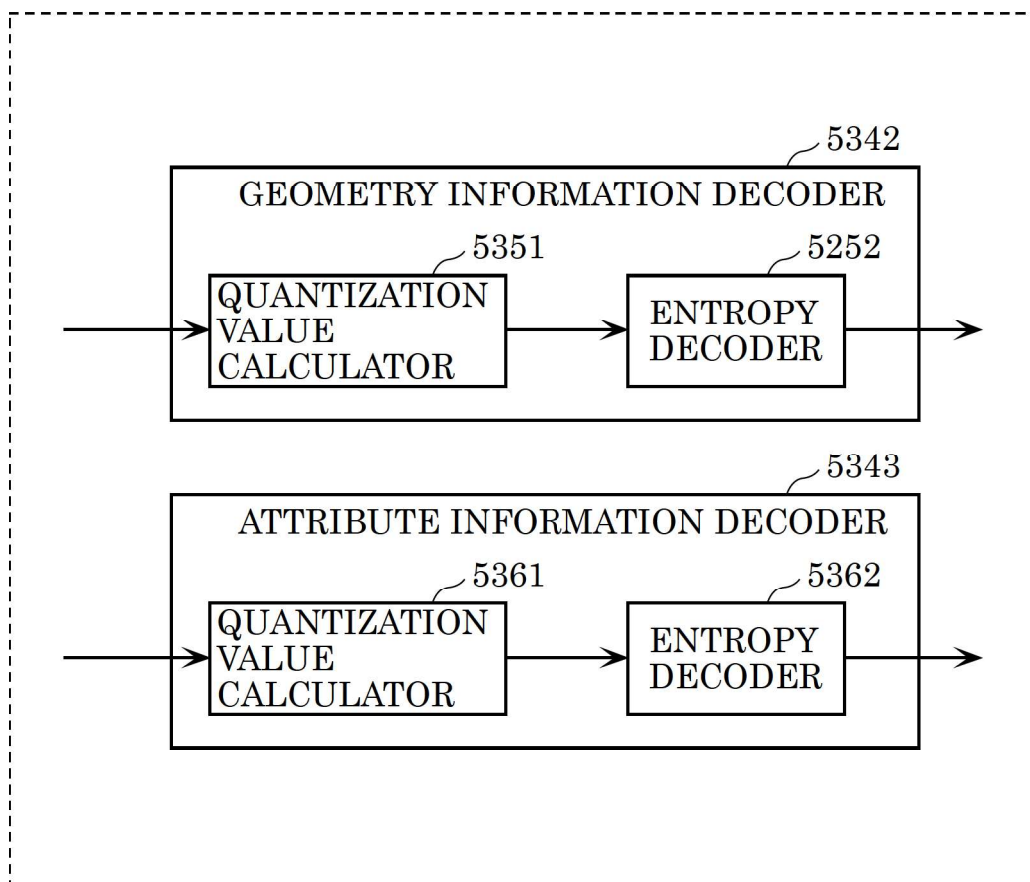


FIG. 76

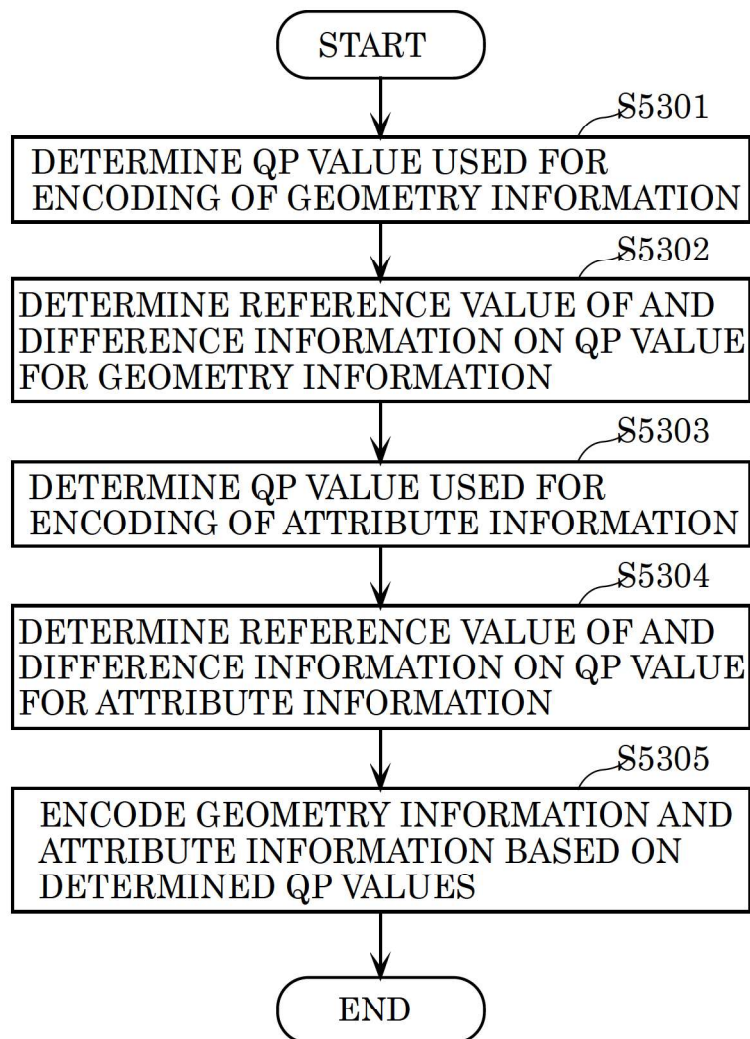


FIG. 77

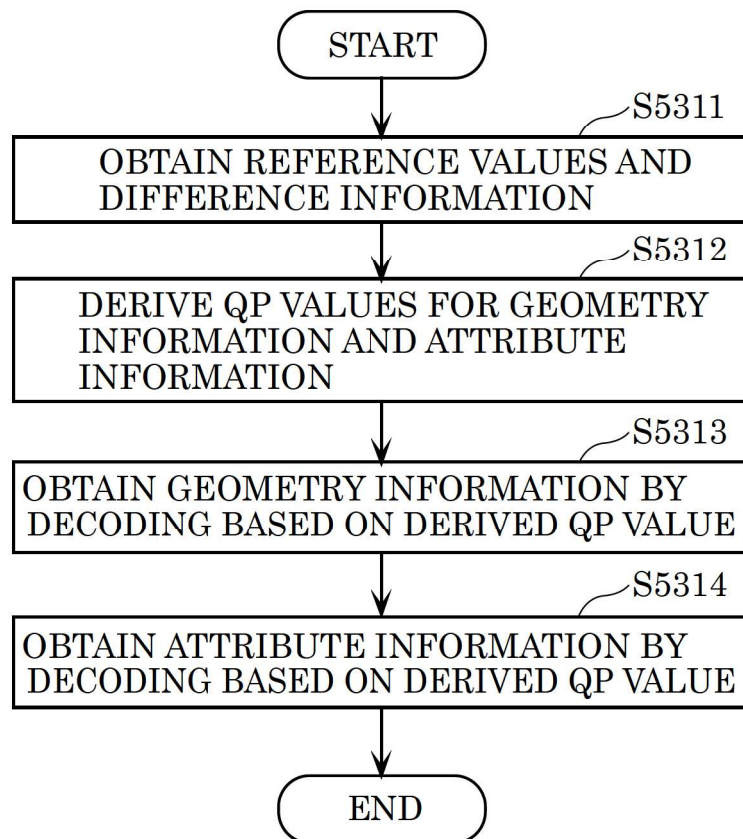


FIG. 78

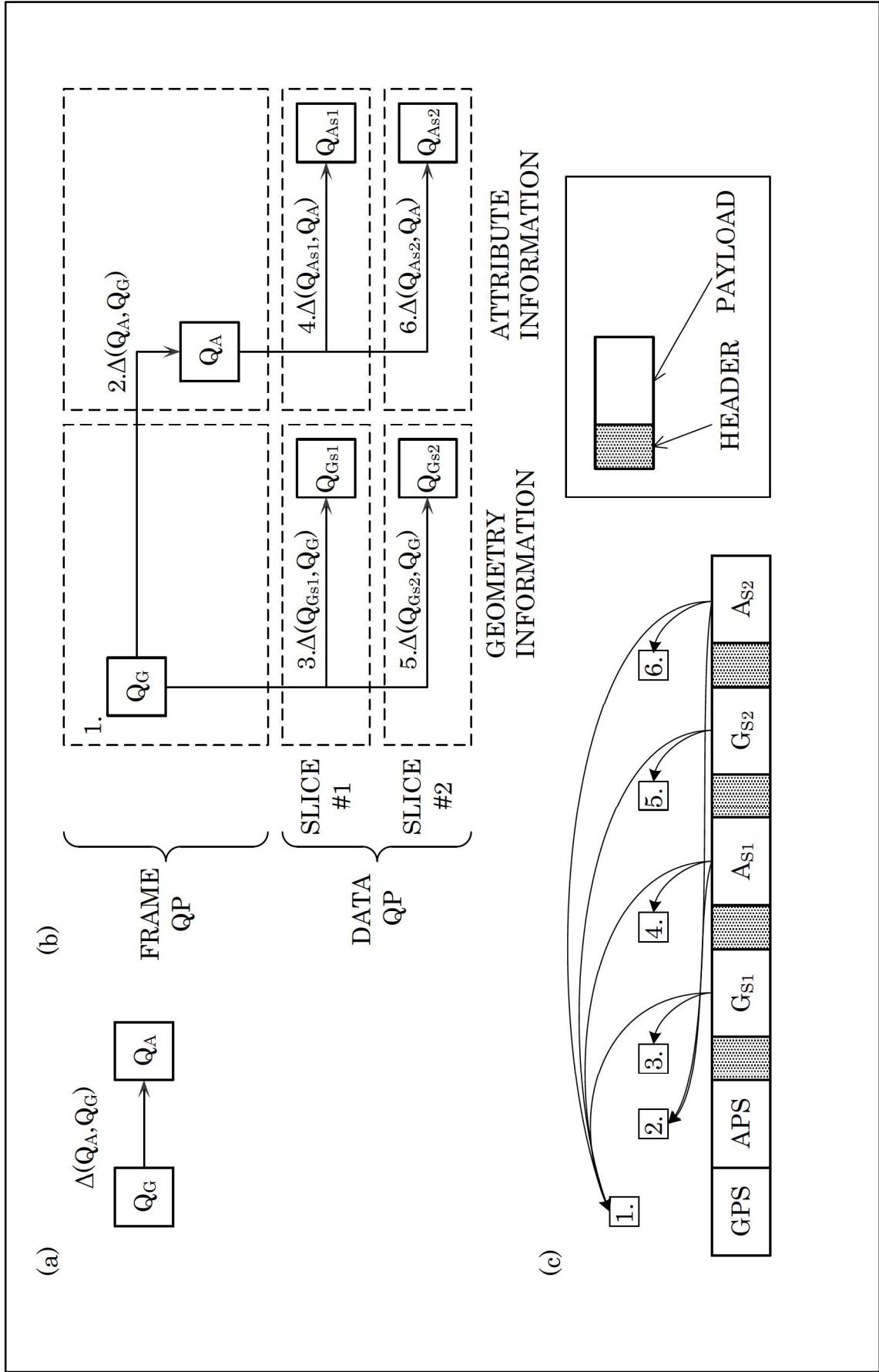


FIG. 79

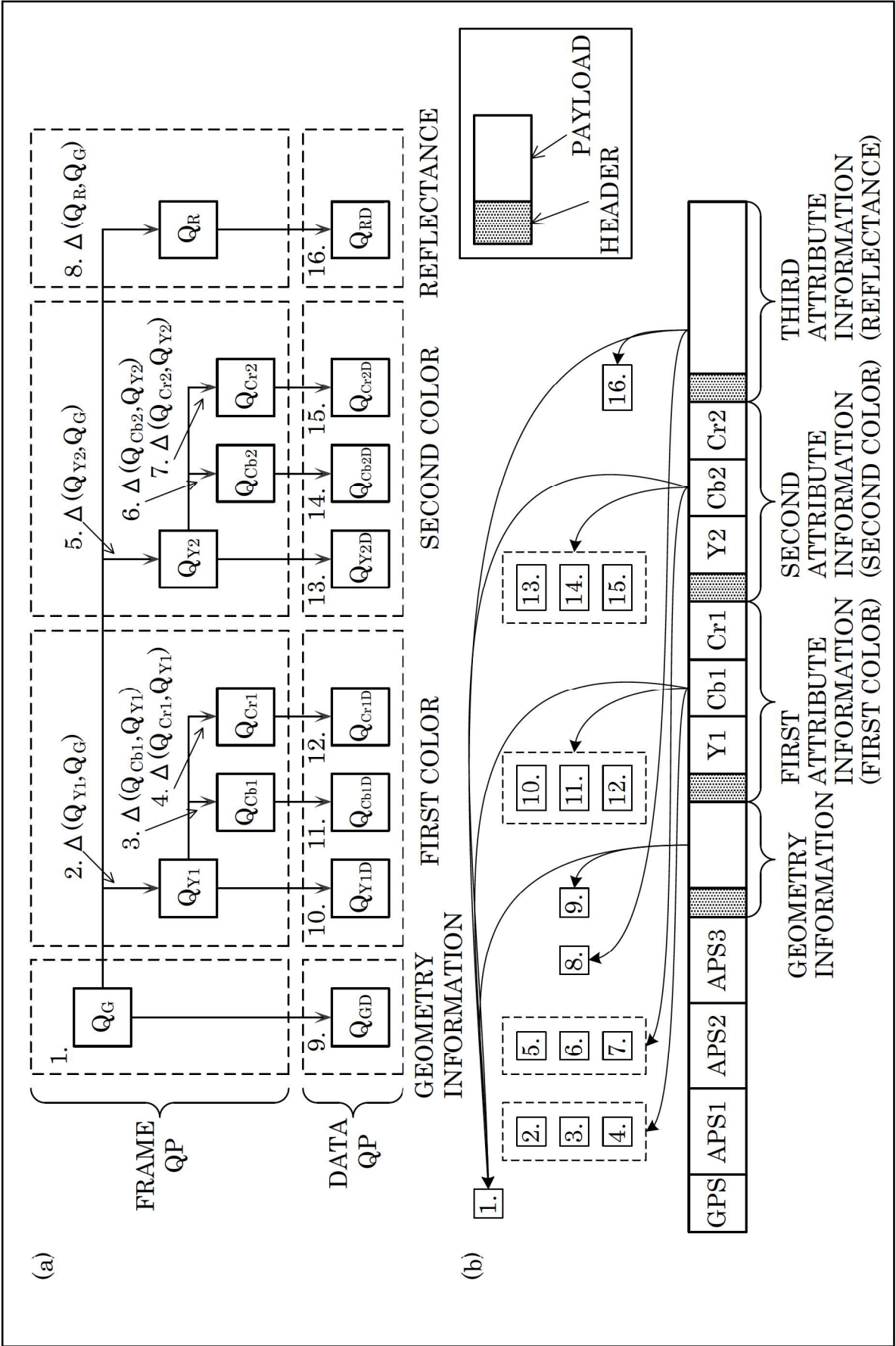


FIG. 80

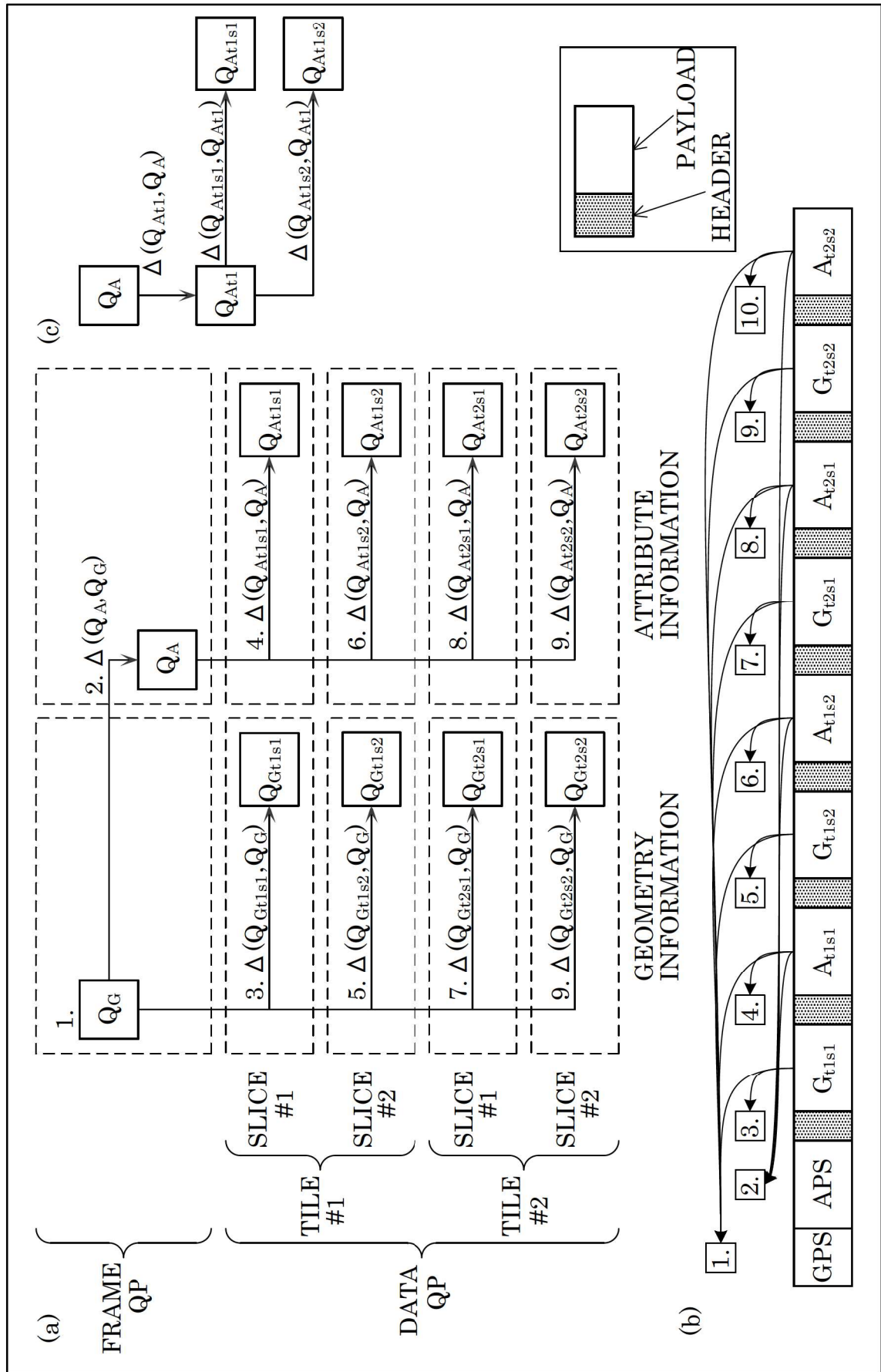


FIG. 81

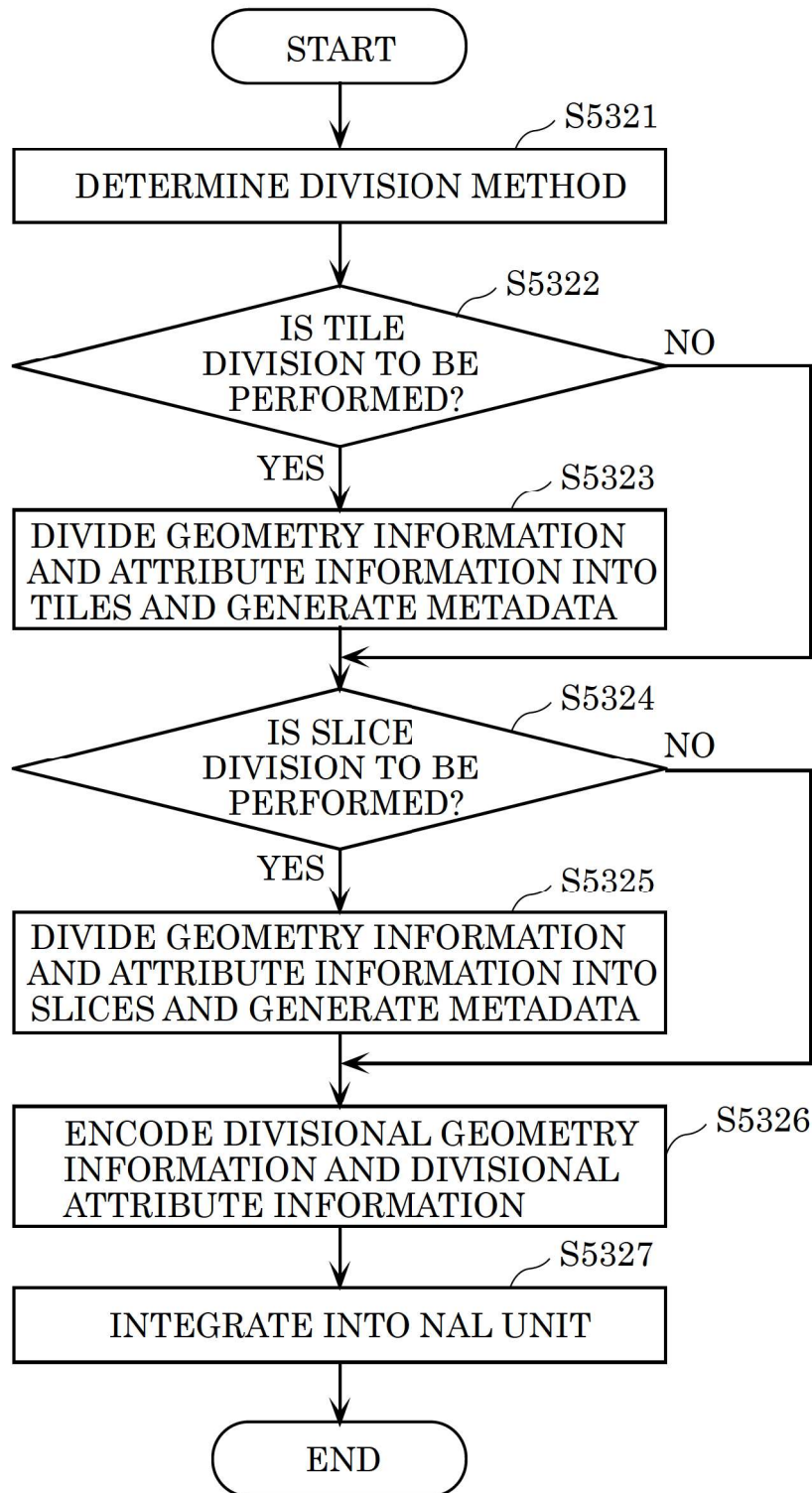


FIG. 82

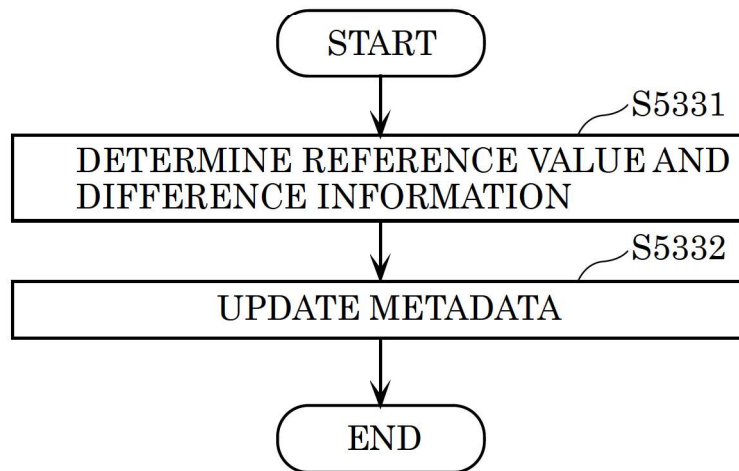


FIG. 83

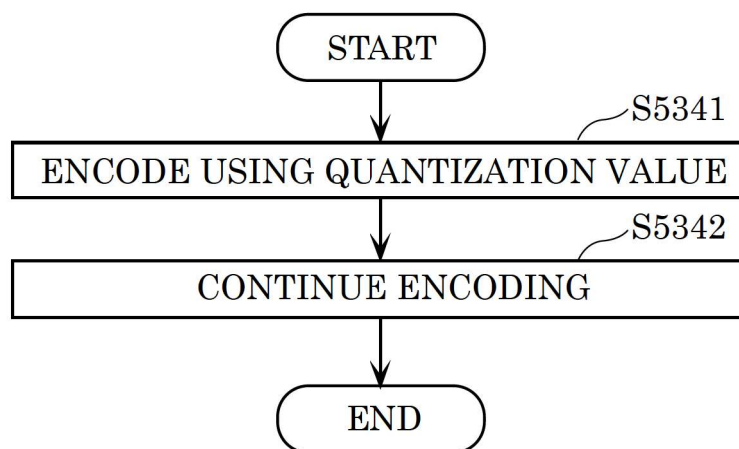


FIG. 84

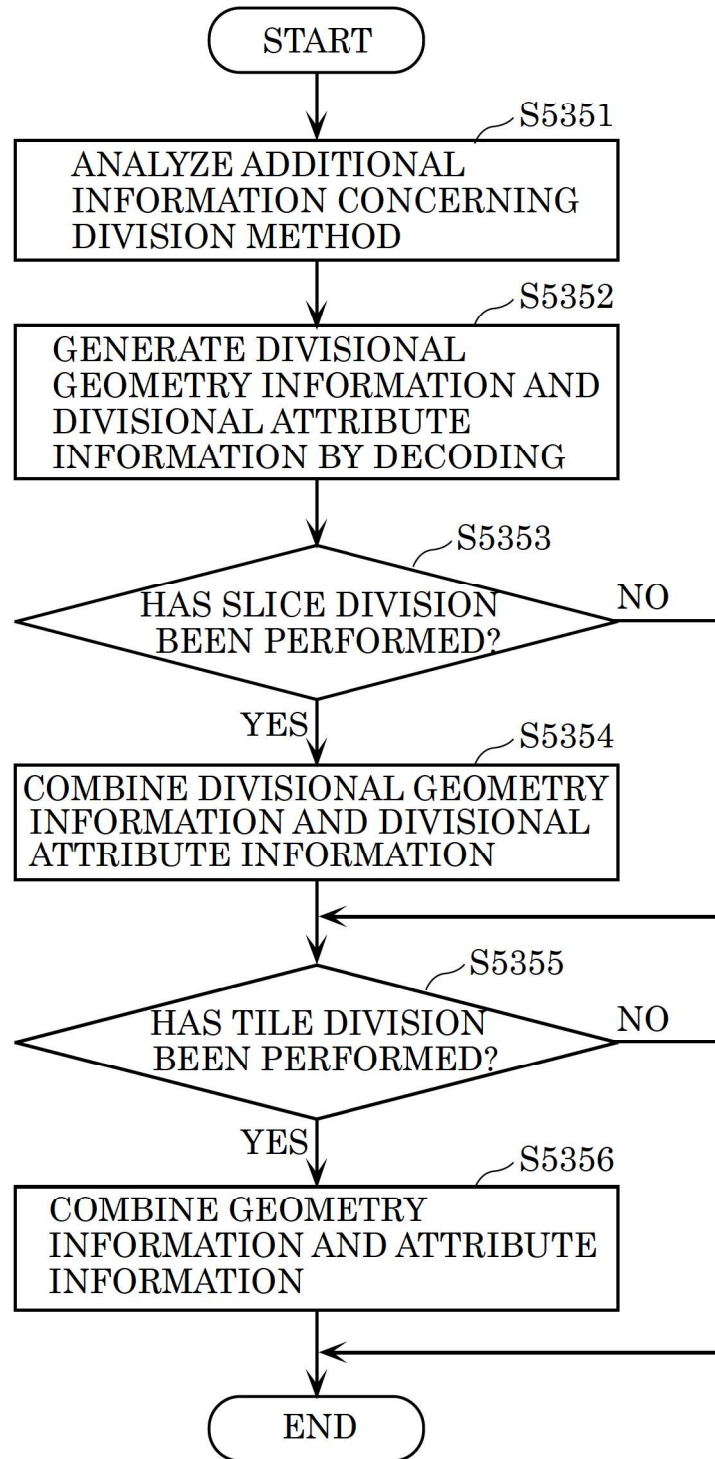


FIG. 85

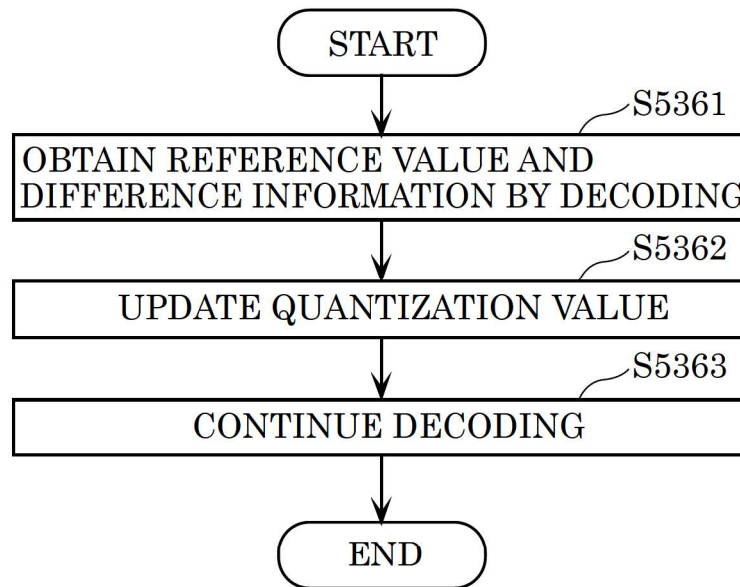


FIG. 86

```
GPS0{  
  gps_idx ..PCC frame number  
  sps_idx  
  
  gps_information()  
  QP_value //default_value  
  
  tile_slice_num //0..NO  
  divide for(tile_slice_num){  
    tile_idx  
    slice_idx  
    gps_slice_tile_information()  
  }  
}
```

FIG. 87

```

APS(){
  aps_idx ..PCC frame Number
  gps_idx ..PCC frame Number

  num_of_attribute
  for(num_of_attribute){
    attribute_type //color, reflectance
    aps_information()

    tile_slice_num //0..no divide
    for(tile_slice_num){
      tile_idx
      slice_idx
      QP_delta_Attribute_to_Geometry
      if(attribute_type==color){
        QP_delta_Cb_to_Y
        QP_delta_Cr_to_Y
      }
      aps_slice_tile_information()
    }
  }
}

```

FIG. 88

```

Geometry_header(){
  gps_idx
  offset
  QP_delta_data_to_frame
  if(tile){
    tile_type
    tile_idx
  }
  if(slice){
    slice_type
    slice_idx
  }
}

```


FIG. 89

```
Attribute_header(){  
    aps_idx  
    offset  
    attribute_type  
    QP_delta_data_to_frame  
    if(attribute_type==color){  
        QP_delta_Cb_to_frame  
        QP_delta_Cr_to_frame  
    }  
    if(tile){  
        tile_type  
        tile_idx  
    }  
    if(slice){  
        slice_type  
        slice_idx  
    }  
}
```


FIG. 90

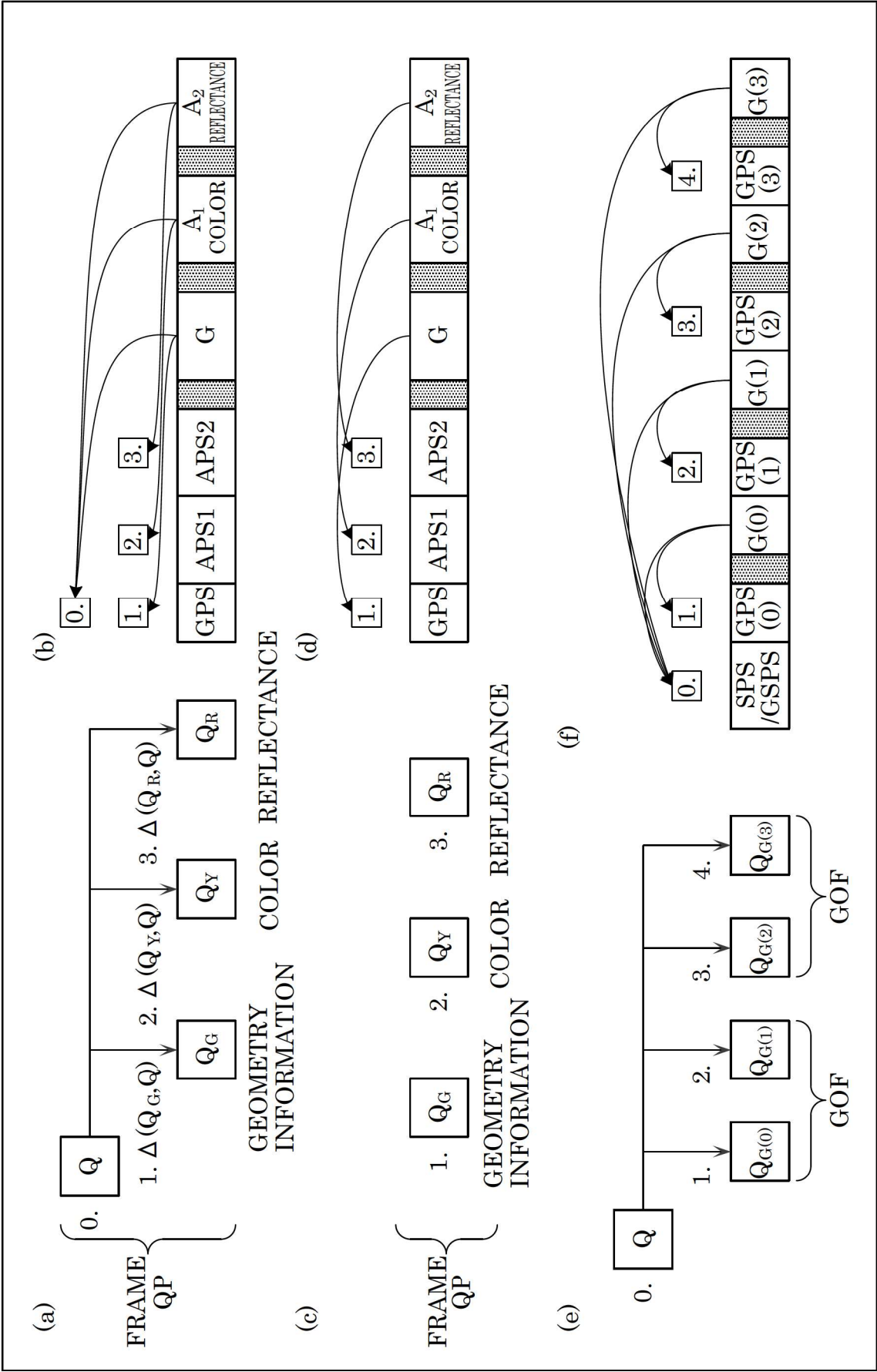


FIG. 91

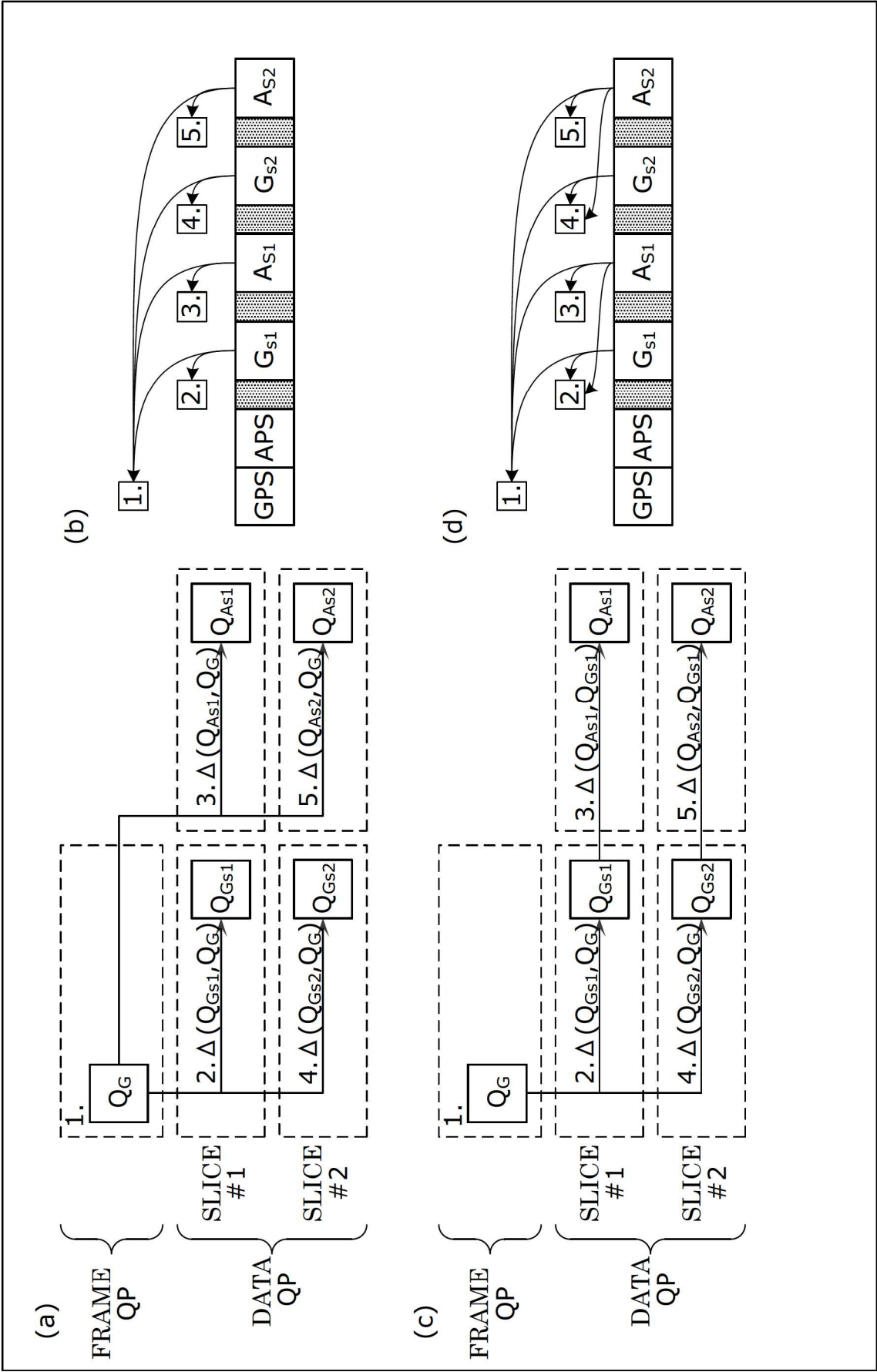


FIG. 93

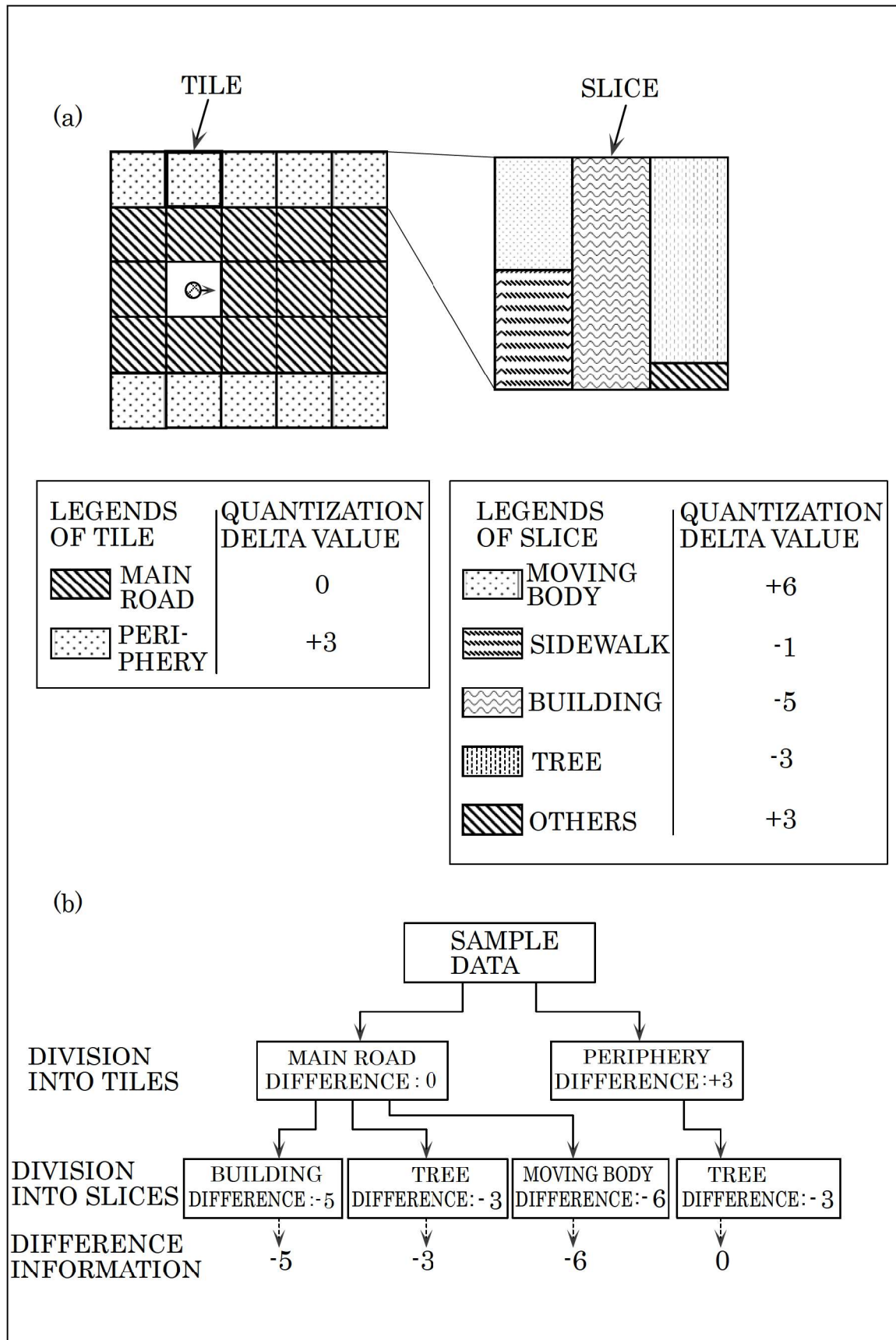


FIG. 94

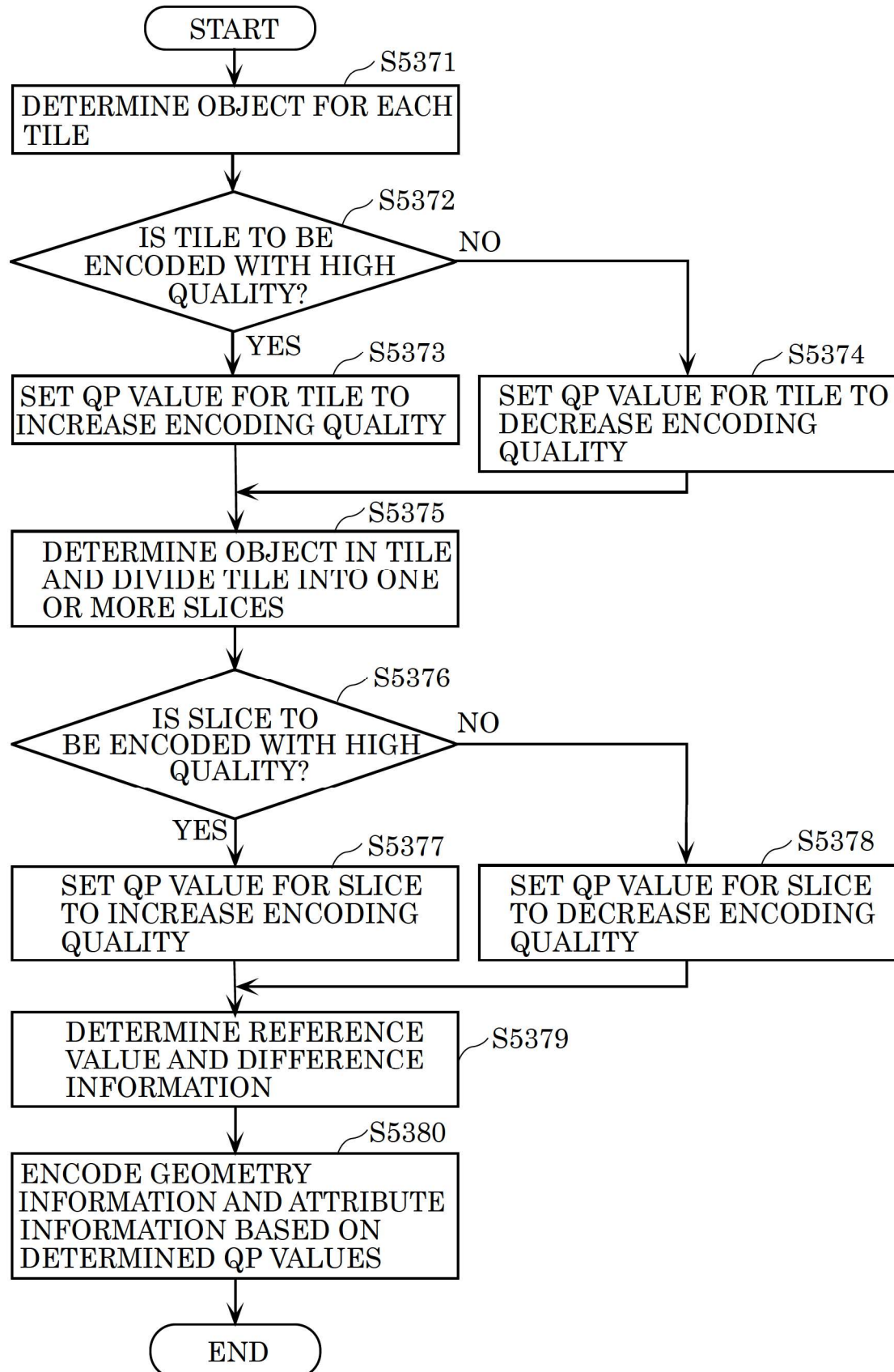


FIG. 95

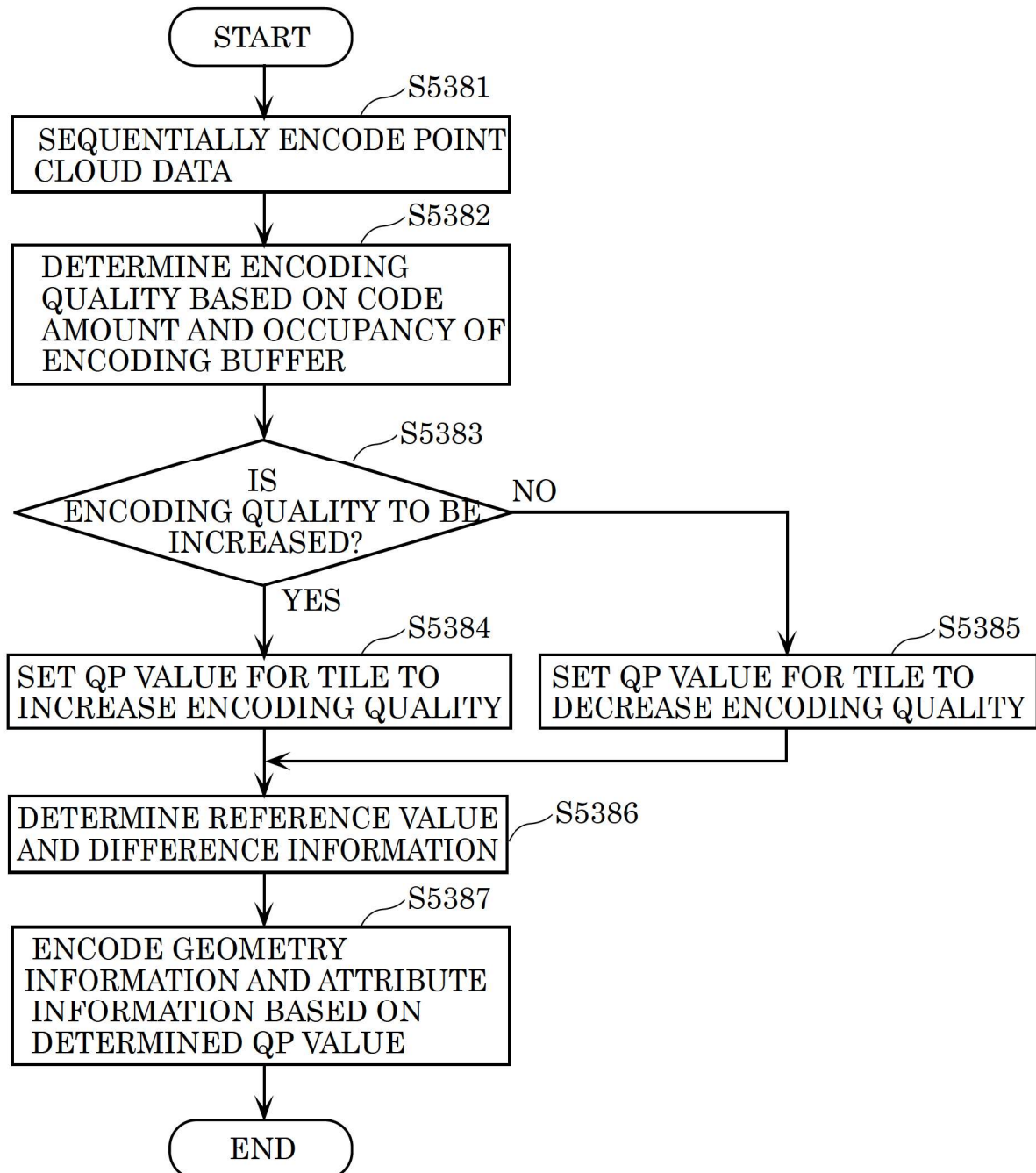


FIG. 96

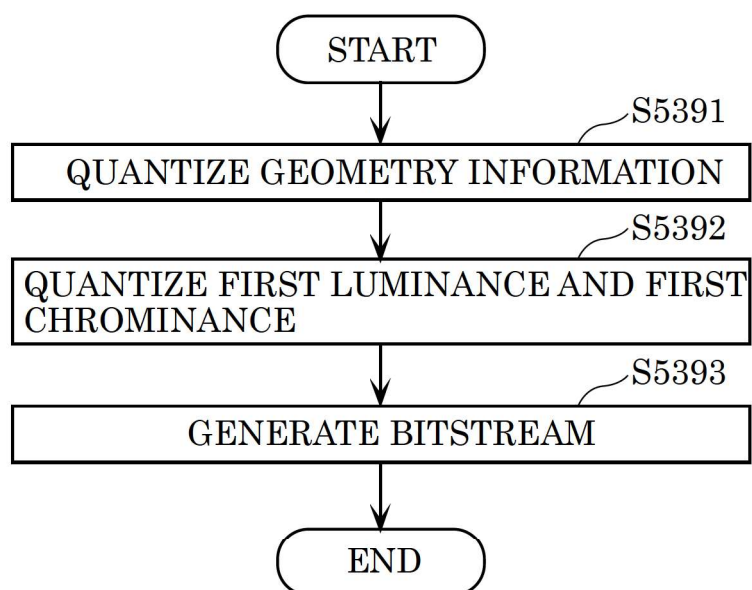


FIG. 97

