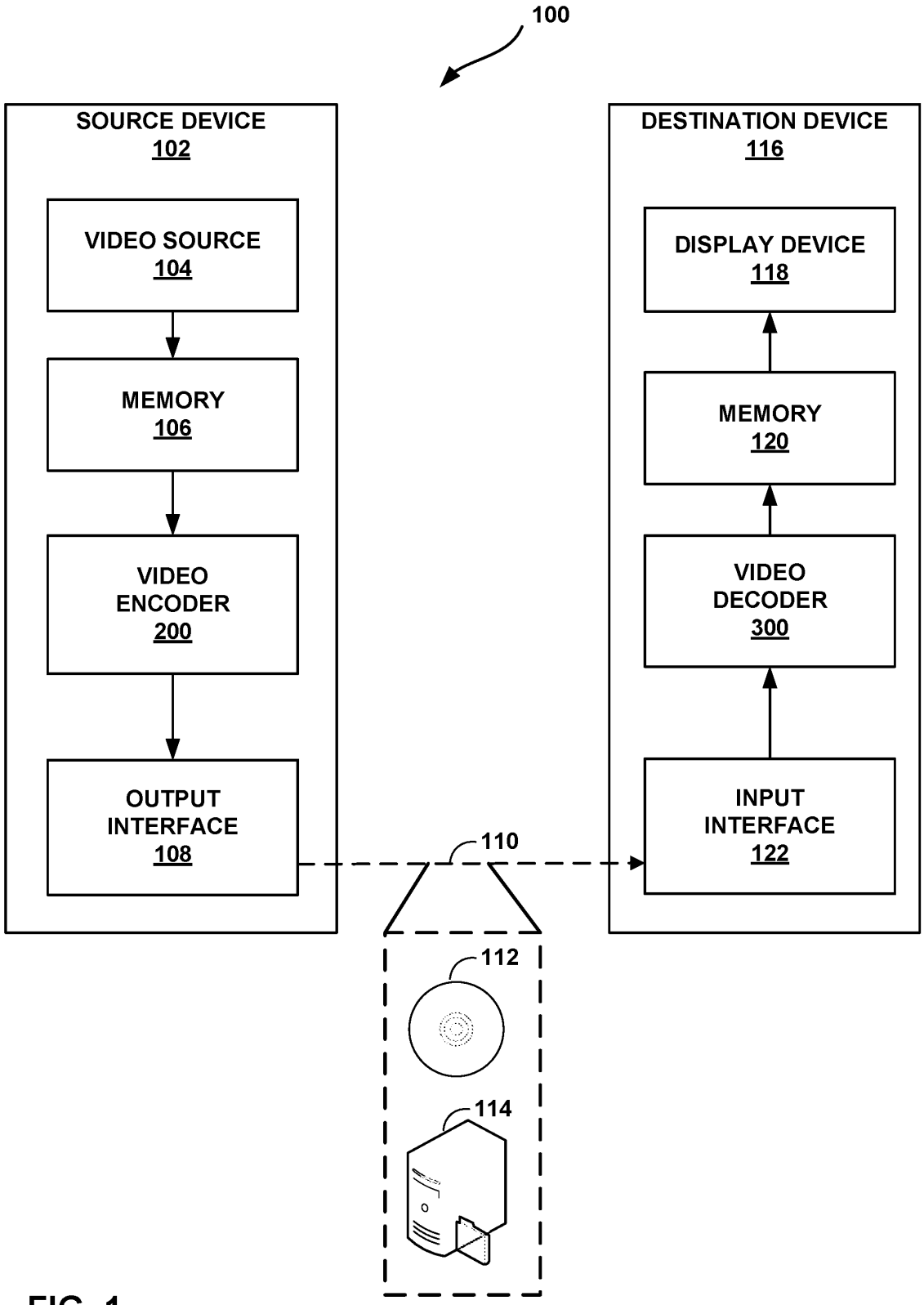
100
SOURCE DEVICE
102
VIDEO SOURCE
104
MEMORY
106
VIDEO
ENCODER
200
OUTPUT
INTERFACE
108
DESTINATION DEVICE
116
DISPLAY DEVICE
118
MEMORY
120
VIDEO
DECODER
300
INPUT
INTERFACE
122
110
112
114

FIG. 1

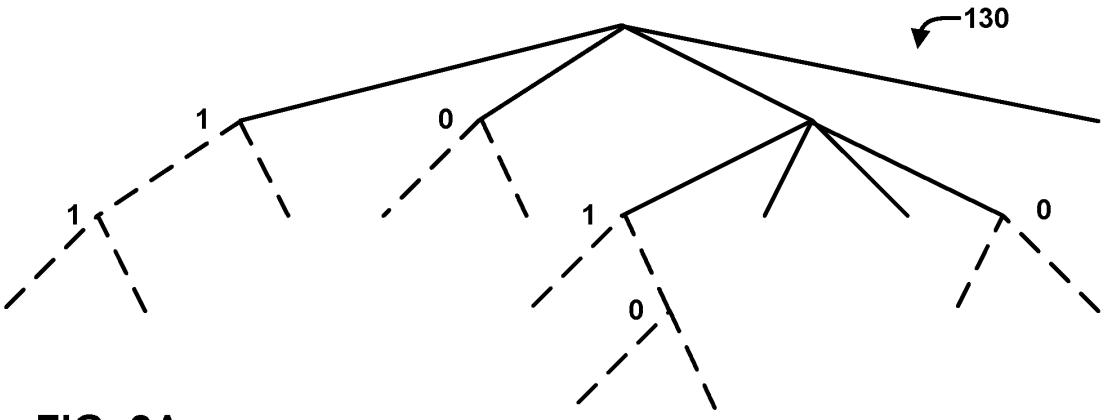

FIG. 2A

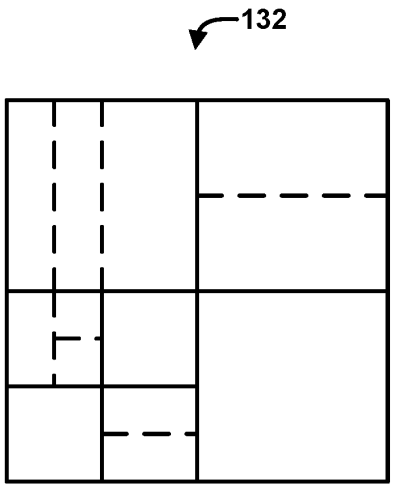

FIG. 2B

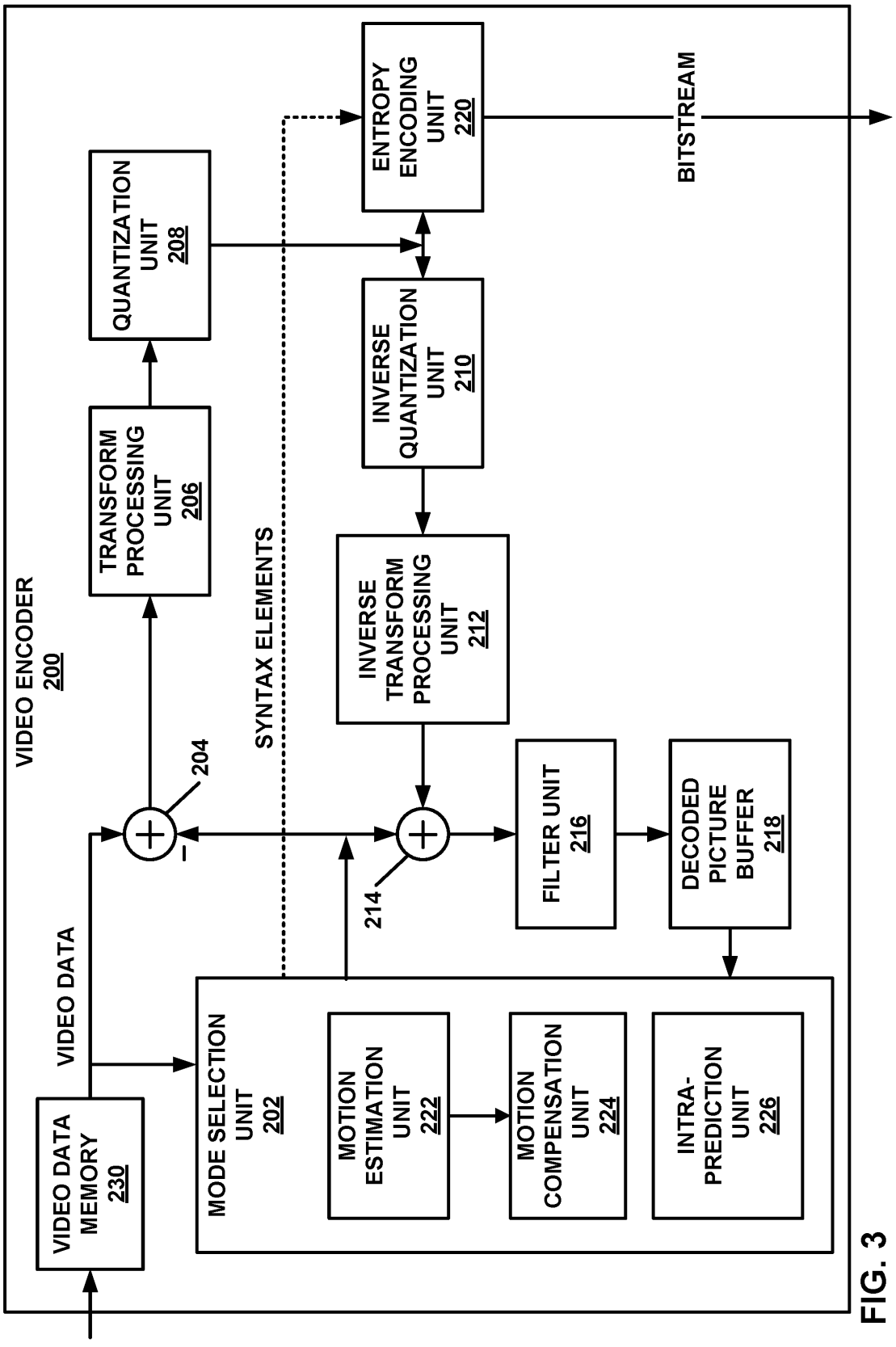
VIDEO ENCODER
200
VIDEO DATA MEMORY
230
VIDEO DATA
MODE SELECTION UNIT
202
MOTION ESTIMATION UNIT
222
MOTION COMPENSATION UNIT
224
INTRA-PREDICTION UNIT
226
204
214
SYNTAX ELEMENTS
TRANSFORM PROCESSING UNIT
206
QUANTIZATION UNIT
208
INVERSE TRANSFORM PROCESSING UNIT
212
INVERSE QUANTIZATION UNIT
210
FILTER UNIT
216
DECODED PICTURE BUFFER
218
ENTROPY ENCODING UNIT
220
BITSTREAM

FIG. 3

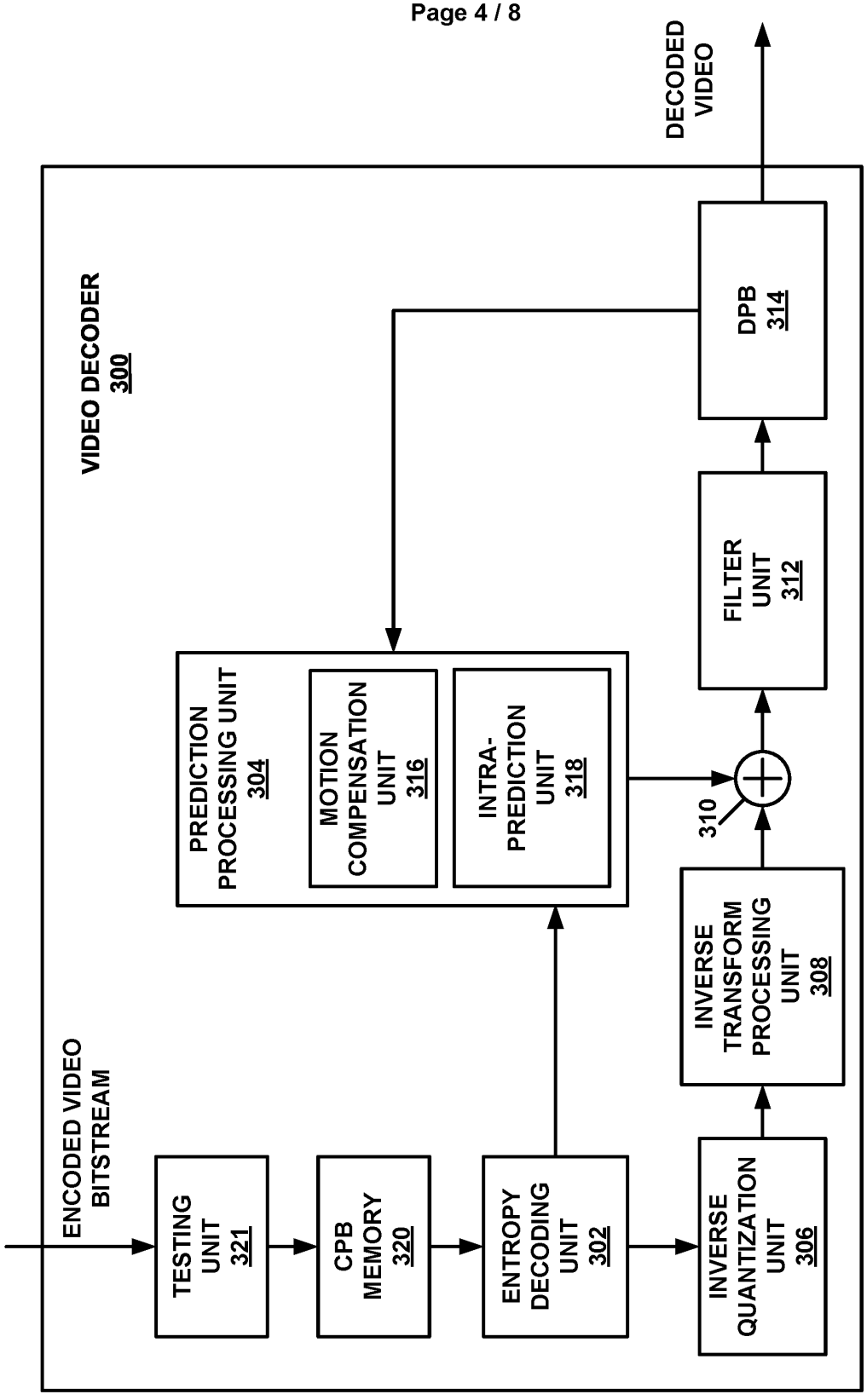
ENCODED VIDEO BITSTREAM
VIDEO DECODER 300
TESTING UNIT 321
CPB MEMORY 320
ENTROPY DECODING UNIT 302
INVERSE QUANTIZATION UNIT 306
INVERSE TRANSFORM PROCESSING UNIT 308
310
PREDICTION PROCESSING UNIT 304
MOTION COMPENSATION UNIT 316
INTRA-PREDICTION UNIT 318
FILTER UNIT 312
DPB 314
DECODED VIDEO

FIG. 4

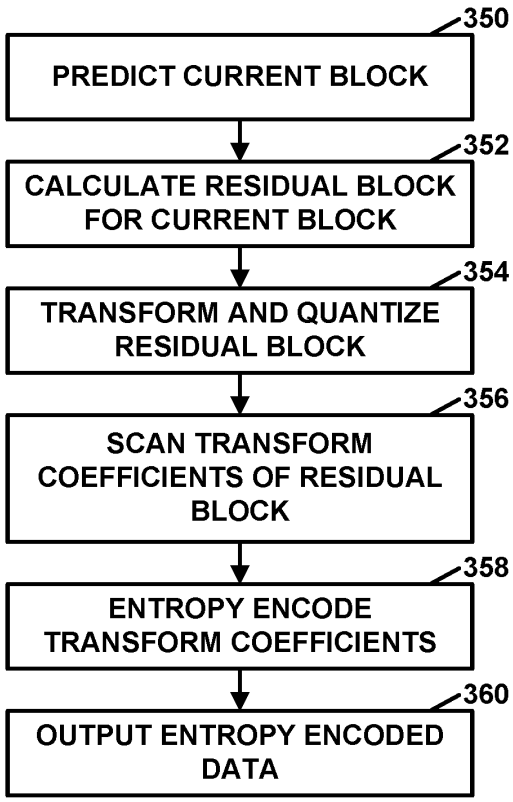
350
PREDICT CURRENT BLOCK
352
CALCULATE RESIDUAL BLOCK FOR CURRENT BLOCK
354
TRANSFORM AND QUANTIZE RESIDUAL BLOCK
356
SCAN TRANSFORM COEFFICIENTS OF RESIDUAL BLOCK
358
ENTROPY ENCODE TRANSFORM COEFFICIENTS
360
OUTPUT ENTROPY ENCODED DATA

FIG. 5

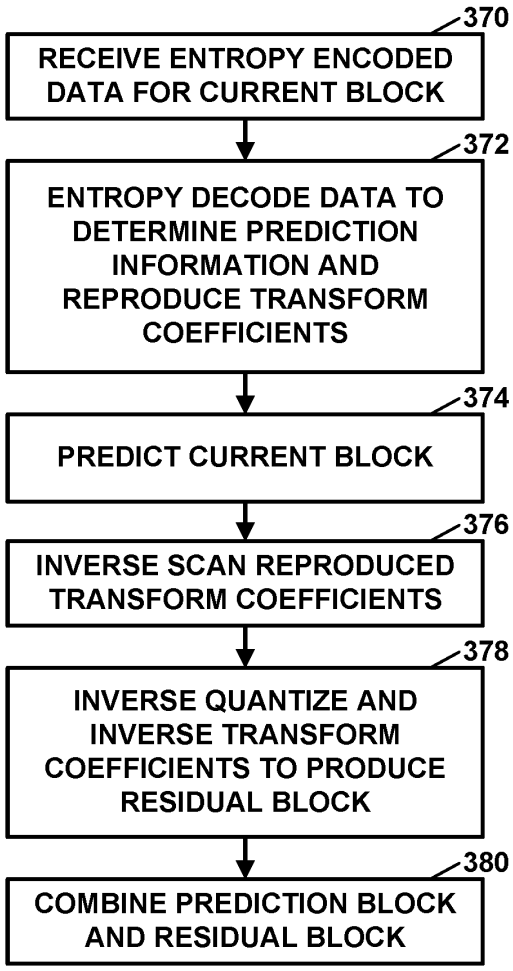
370
RECEIVE ENTROPY ENCODED DATA FOR CURRENT BLOCK
372
ENTROPY DECODE DATA TO DETERMINE PREDICTION INFORMATION AND REPRODUCE TRANSFORM COEFFICIENTS
374
PREDICT CURRENT BLOCK
376
INVERSE SCAN REPRODUCED TRANSFORM COEFFICIENTS
378
INVERSE QUANTIZE AND INVERSE TRANSFORM COEFFICIENTS TO PRODUCE RESIDUAL BLOCK
380
COMBINE PREDICTION BLOCK AND RESIDUAL BLOCK

FIG. 6

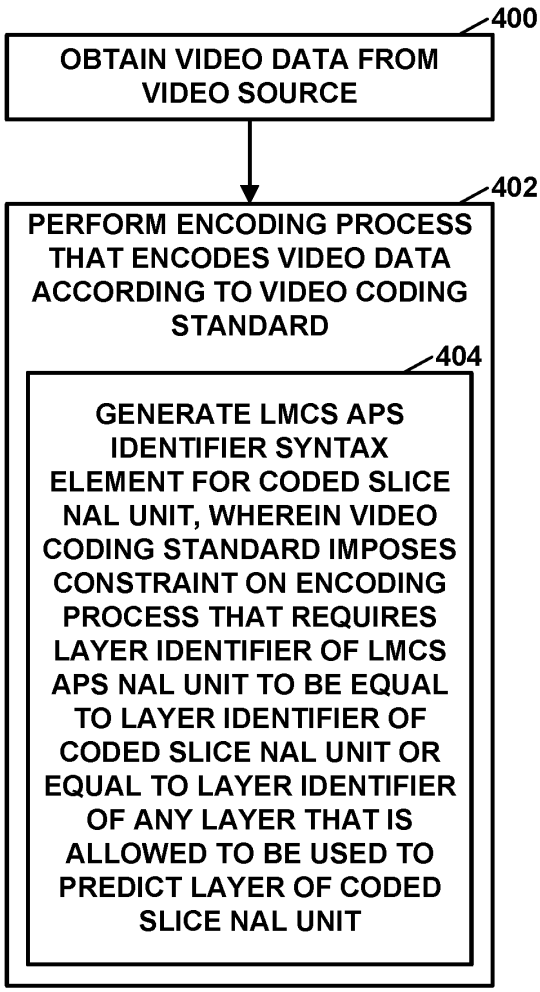
400
OBTAIN VIDEO DATA FROM VIDEO SOURCE
402
PERFORM ENCODING PROCESS THAT ENCODES VIDEO DATA ACCORDING TO VIDEO CODING STANDARD
404
GENERATE LMCS APS IDENTIFIER SYNTAX ELEMENT FOR CODED SLICE NAL UNIT, WHEREIN VIDEO CODING STANDARD IMPOSES CONSTRAINT ON ENCODING PROCESS THAT REQUIRES LAYER IDENTIFIER OF LMCS APS NAL UNIT TO BE EQUAL TO LAYER IDENTIFIER OF CODED SLICE NAL UNIT OR EQUAL TO LAYER IDENTIFIER OF ANY LAYER THAT IS ALLOWED TO BE USED TO PREDICT LAYER OF CODED SLICE NAL UNIT

FIG. 7

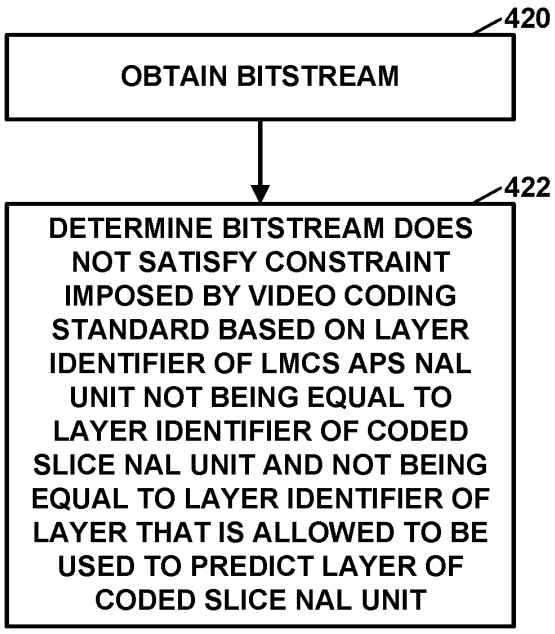
420
OBTAIN BITSTREAM
422
DETERMINE BITSTREAM DOES NOT SATISFY CONSTRAINT IMPOSED BY VIDEO CODING STANDARD BASED ON LAYER IDENTIFIER OF LMCS APS NAL UNIT NOT BEING EQUAL TO LAYER IDENTIFIER OF CODED SLICE NAL UNIT AND NOT BEING EQUAL TO LAYER IDENTIFIER OF LAYER THAT IS ALLOWED TO BE USED TO PREDICT LAYER OF CODED SLICE NAL UNIT

FIG. 8