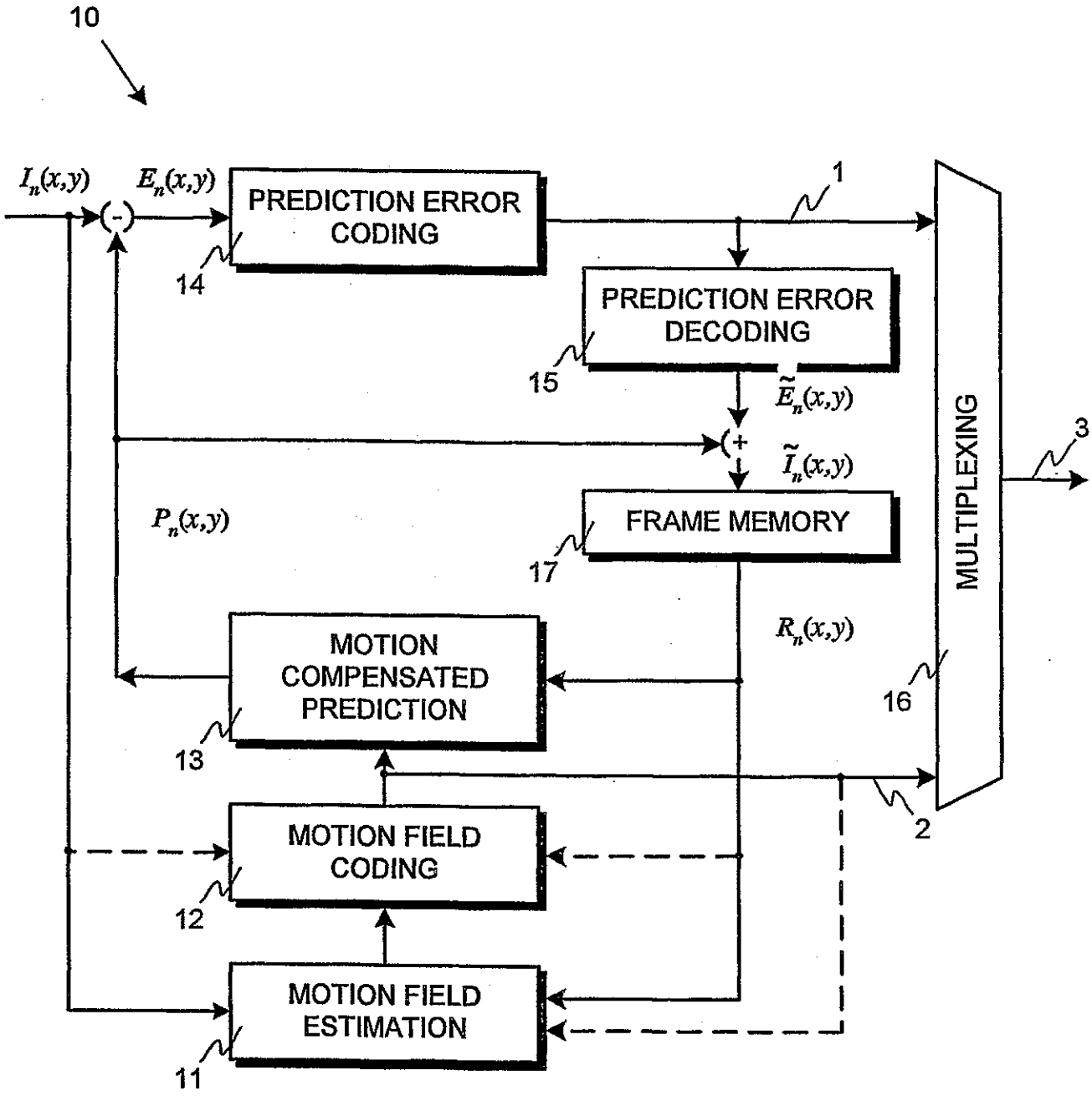


FIG. 1 PRIOR ART

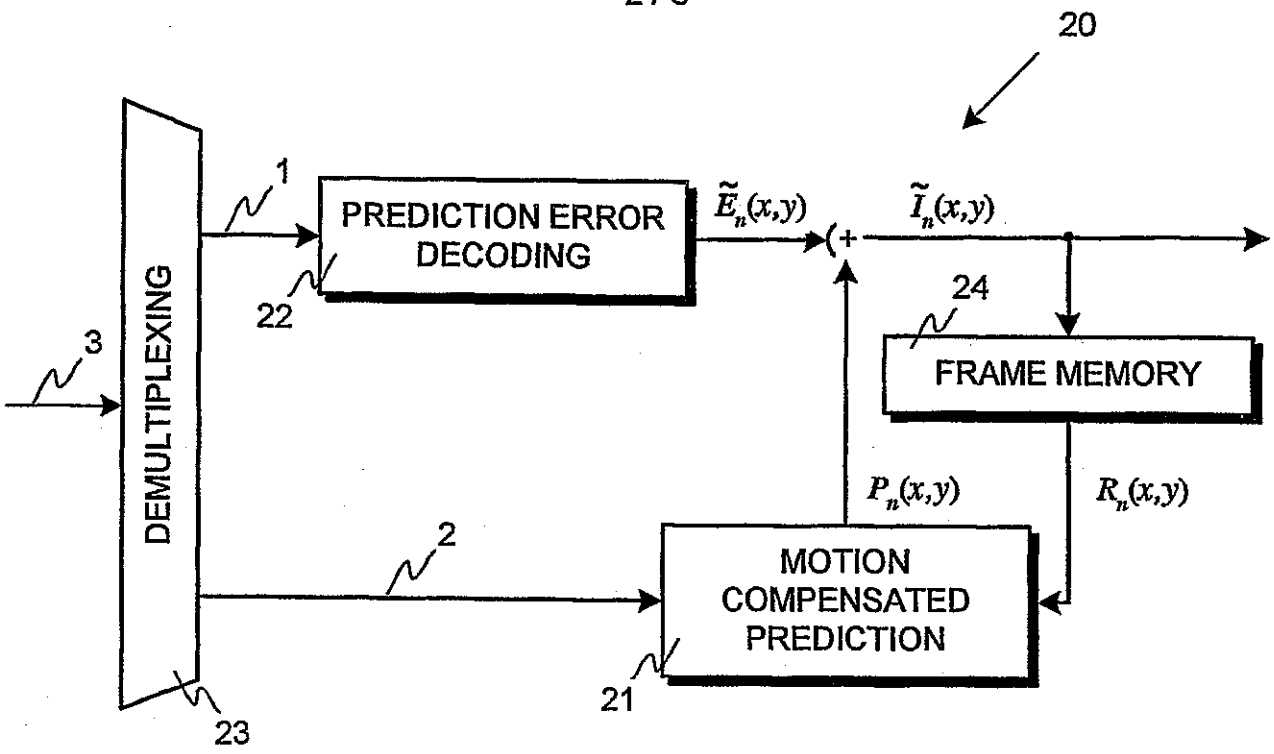


FIG. 2 PRIOR ART

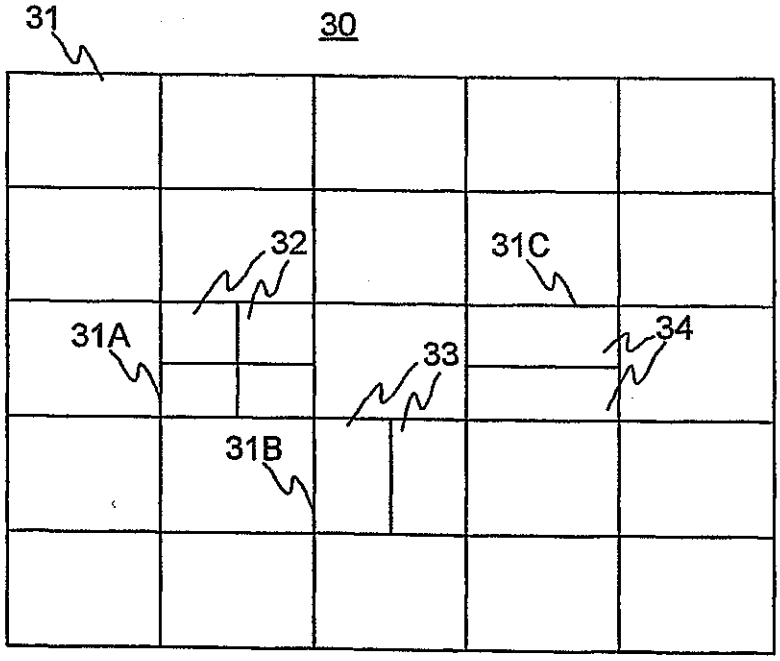


FIG. 3 PRIOR ART

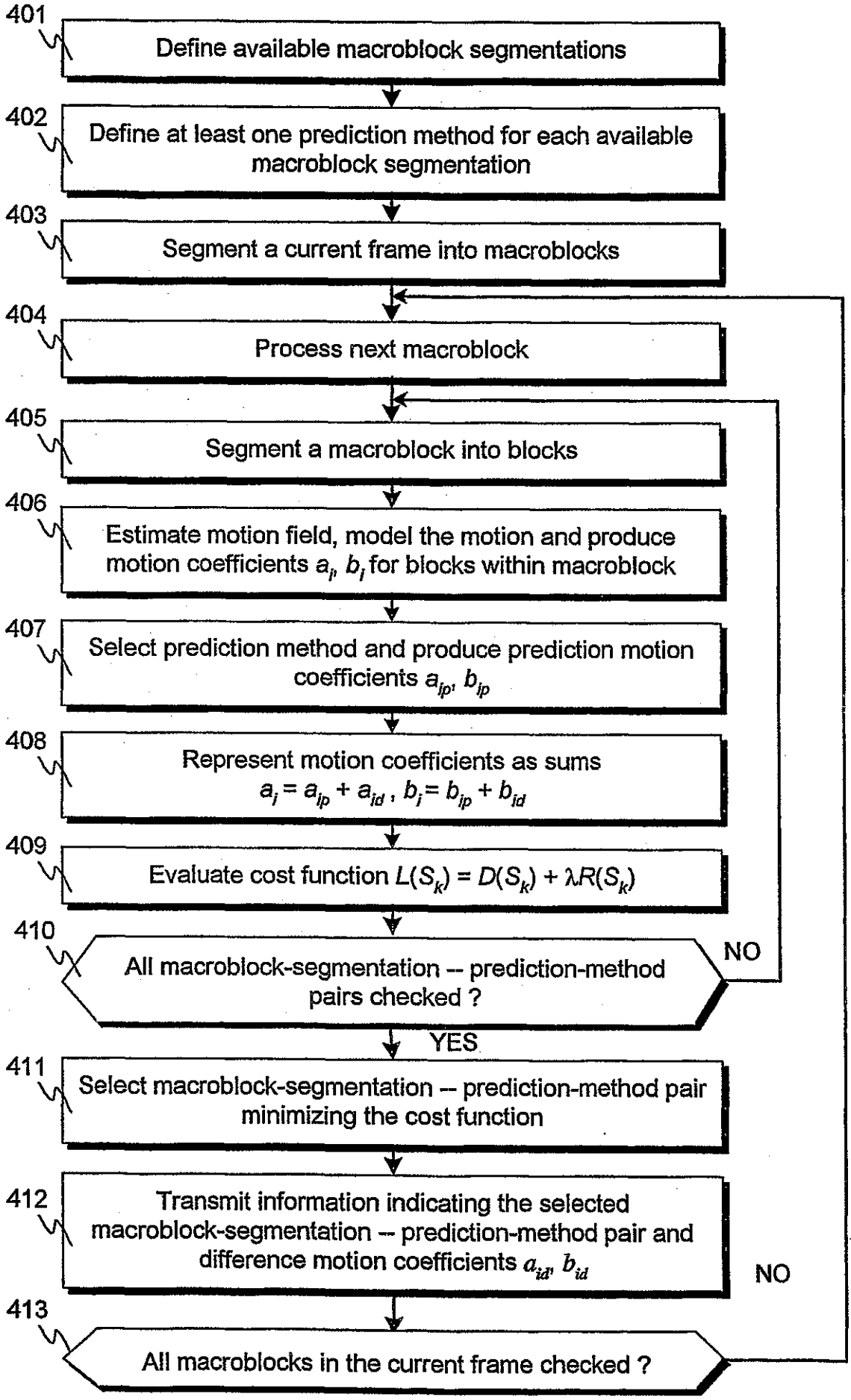

401
Define available macroblock segmentations
402
Define at least one prediction method for each available macroblock segmentation
403
Segment a current frame into macroblocks
404
Process next macroblock
405
Segment a macroblock into blocks
406
Estimate motion field, model the motion and produce motion coefficients a_i, b_i for blocks within macroblock
407
Select prediction method and produce prediction motion coefficients a_{ip}, b_{ip}
408
Represent motion coefficients as sums $a_i = a_{ip} + a_{id}$, $b_i = b_{ip} + b_{id}$
409
Evaluate cost function $L(S_k) = D(S_k) + \lambda R(S_k)$
410
All macroblock-segmentation -- prediction-method pairs checked ?
NO
YES
411
Select macroblock-segmentation -- prediction-method pair minimizing the cost function
412
Transmit information indicating the selected macroblock-segmentation -- prediction-method pair and difference motion coefficients a_{id}, b_{id}
NO
413
All macroblocks in the current frame checked ?

FIG. 4

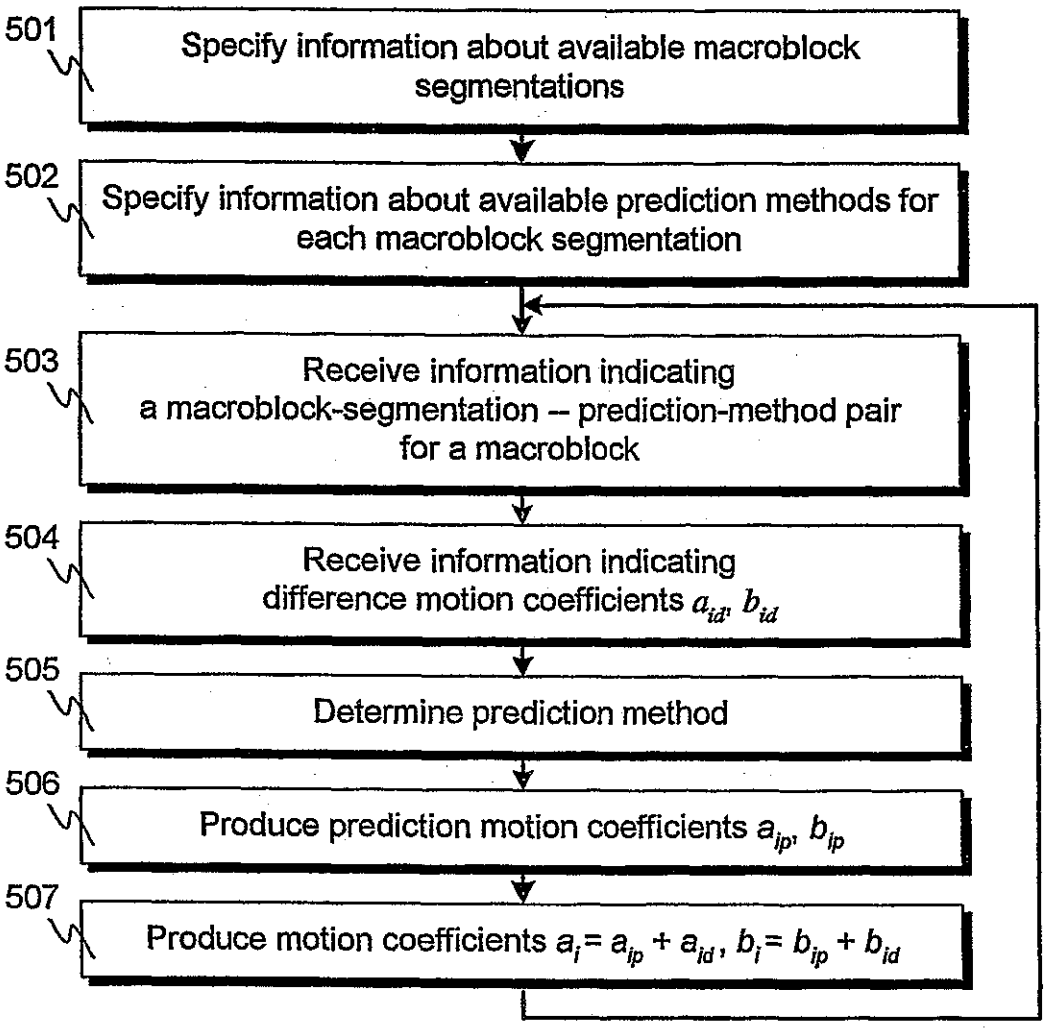

501
Specify information about available macroblock segmentations
502
Specify information about available prediction methods for each macroblock segmentation
503
Receive information indicating a macroblock-segmentation -- prediction-method pair for a macroblock
504
Receive information indicating difference motion coefficients a_{id}, b_{id}
505
Determine prediction method
506
Produce prediction motion coefficients a_{ip}, b_{ip}
507
Produce motion coefficients $a_i = a_{ip} + a_{id}$, $b_i = b_{ip} + b_{id}$

FIG. 5

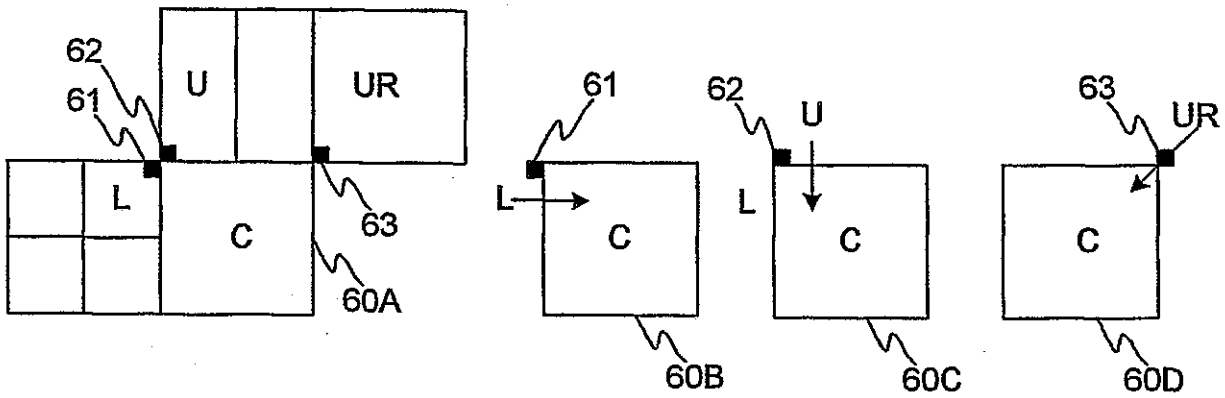

62
61
U
UR
L
C
63
60A
61
L
C
60B
62
U
L
C
60C
63
UR
C
60D

FIG. 6

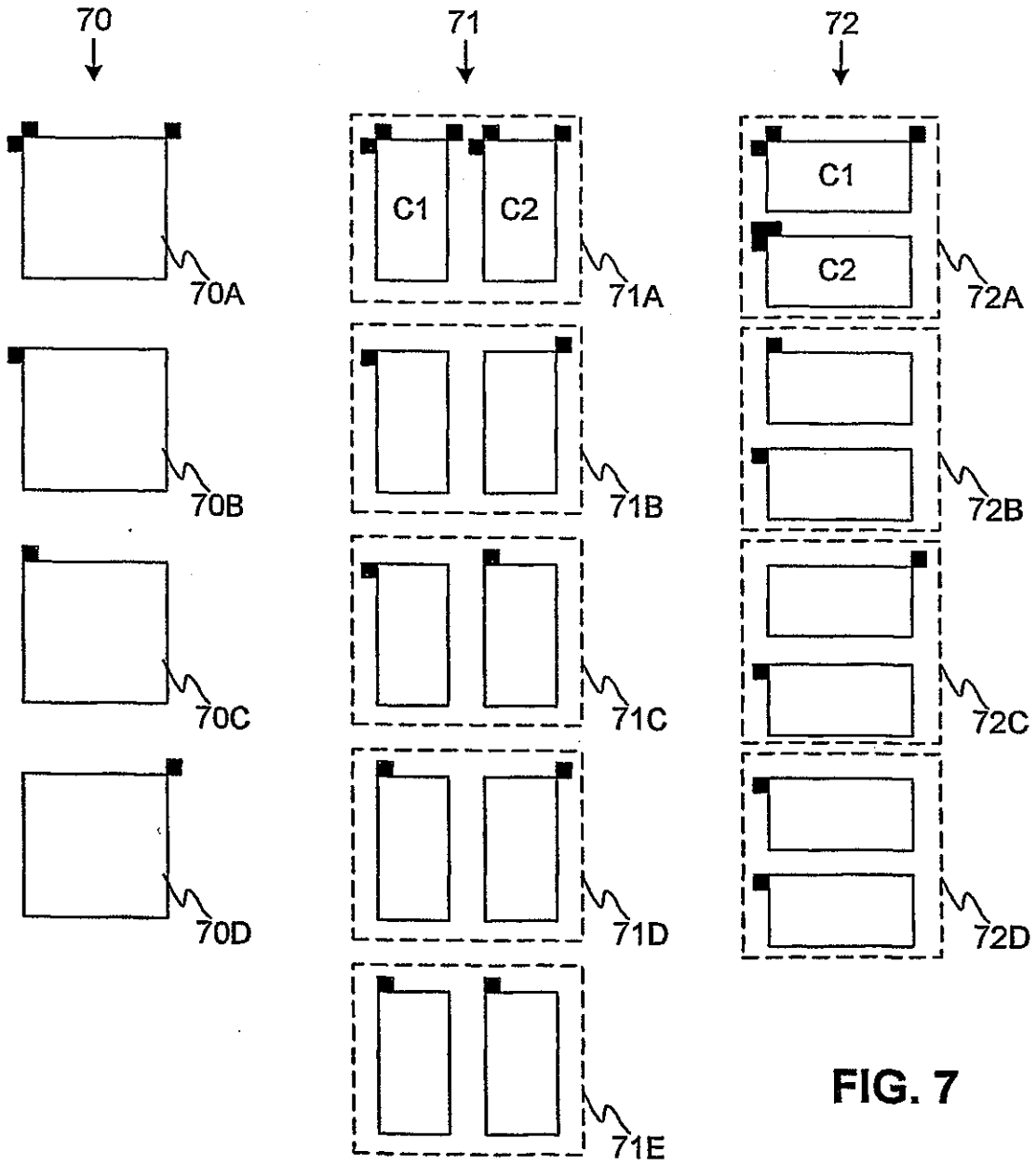

70
71
72
70A
70B
70C
70D
C1
C2
71A
71B
71C
71D
71E
C1
C2
72A
72B
72C
72D

FIG. 7

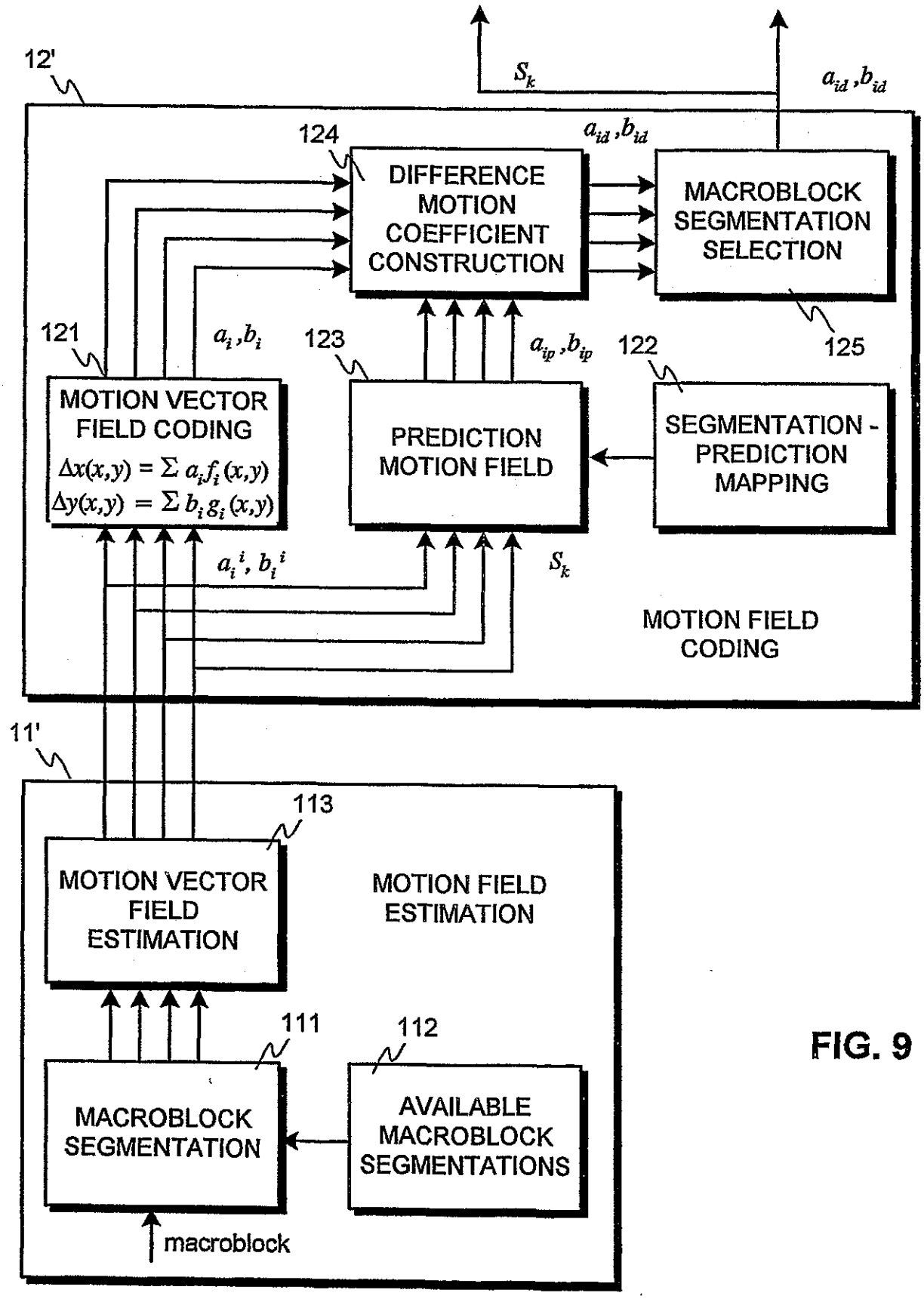

12'
S_k
a_{id}, b_{id}
124
DIFFERENCE MOTION COEFFICIENT CONSTRUCTION
a_{id}, b_{id}
MACROBLOCK SEGMENTATION SELECTION
125
121
a_i, b_i
123
a_{ip}, b_{ip}
122
MOTION VECTOR FIELD CODING
$\Delta x(x,y) = \Sigma a_i f_i(x,y)$
$\Delta y(x,y) = \Sigma b_i g_i(x,y)$
PREDICTION MOTION FIELD
SEGMENTATION - PREDICTION MAPPING
a_i^i, b_i^i
S_k
MOTION FIELD CODING
11'
113
MOTION VECTOR FIELD ESTIMATION
MOTION FIELD ESTIMATION
111
112
MACROBLOCK SEGMENTATION
AVAILABLE MACROBLOCK SEGMENTATIONS
macroblock

FIG. 9

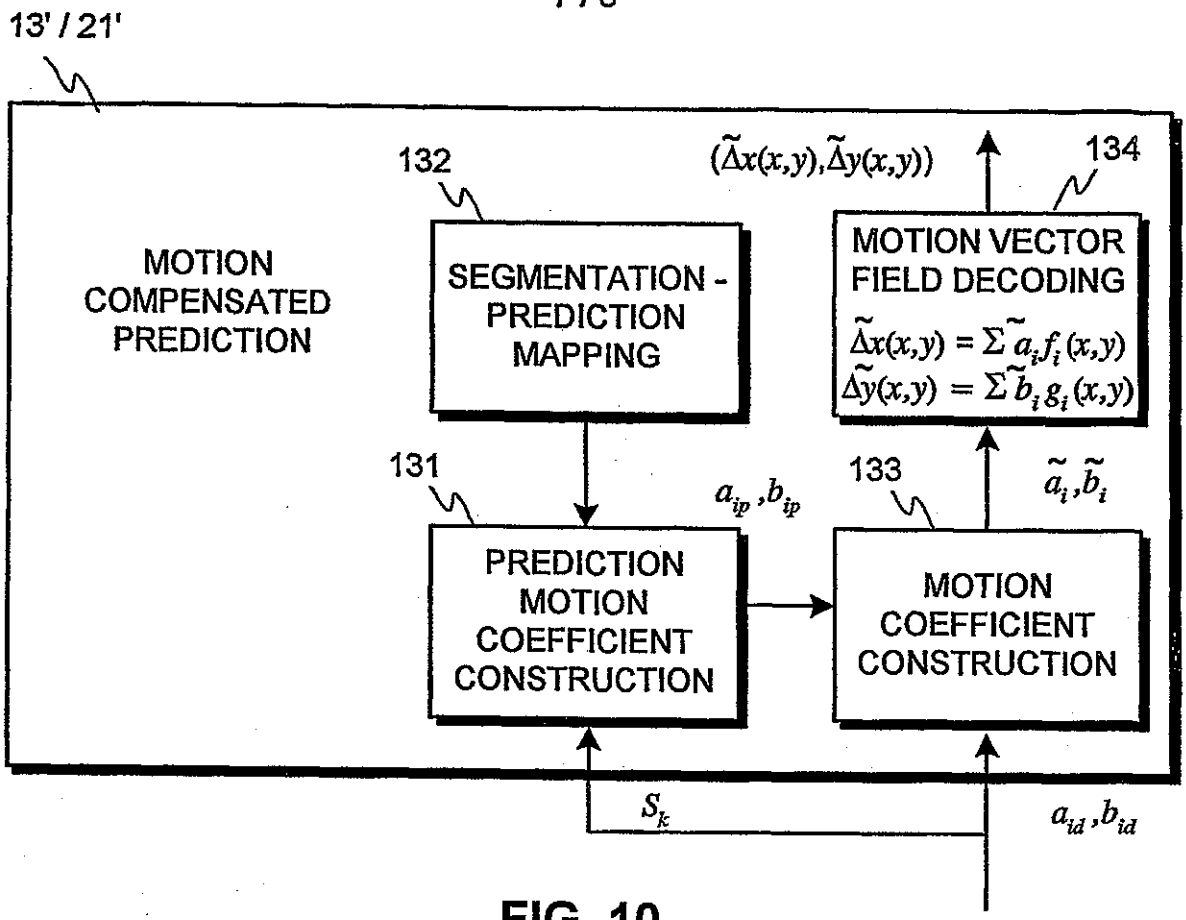

13' / 21'
MOTION COMPENSATED PREDICTION
132
SEGMENTATION - PREDICTION MAPPING
$(\tilde{\Delta}x(x,y),\tilde{\Delta}y(x,y))$
134
MOTION VECTOR FIELD DECODING
$\tilde{\Delta}x(x,y) = \Sigma\tilde{a}_i f_i(x,y)$
$\tilde{\Delta}y(x,y) = \Sigma\tilde{b}_i g_i(x,y)$
131
a_{ip}, b_{ip}
133
$\tilde{a}_i, \tilde{b}_i$
PREDICTION MOTION COEFFICIENT CONSTRUCTION
MOTION COEFFICIENT CONSTRUCTION
S_k
a_{id}, b_{id}

FIG. 10

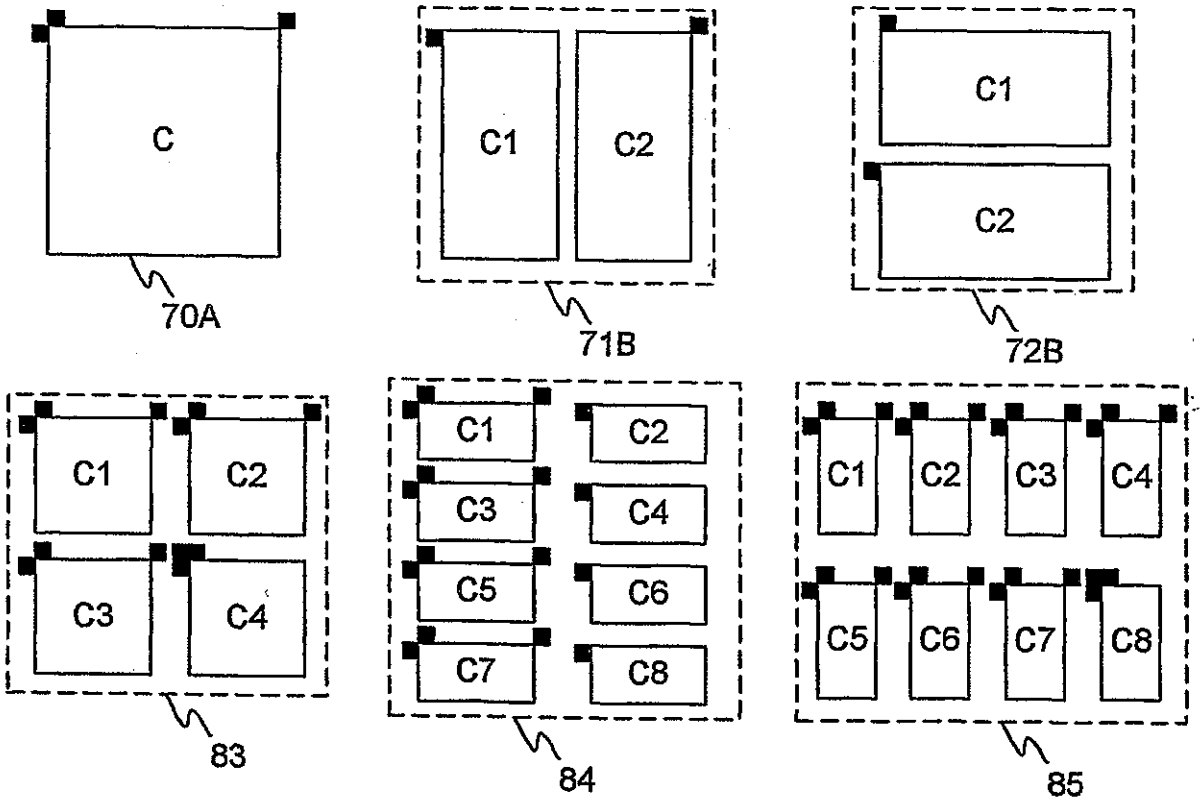

C
70A
C1
C2
71B
C1
C2
72B
C1
C2
C3
C4
83
C1
C2
C3
C4
C5
C6
C7
C8
84
C1
C2
C3
C4
C5
C6
C7
C8
85

FIG. 8

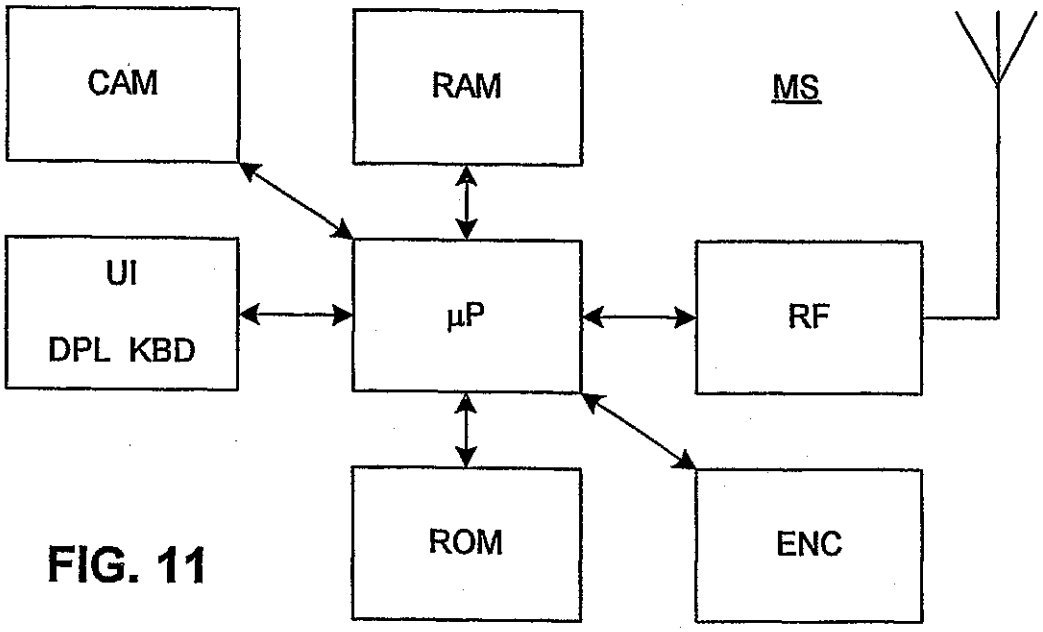
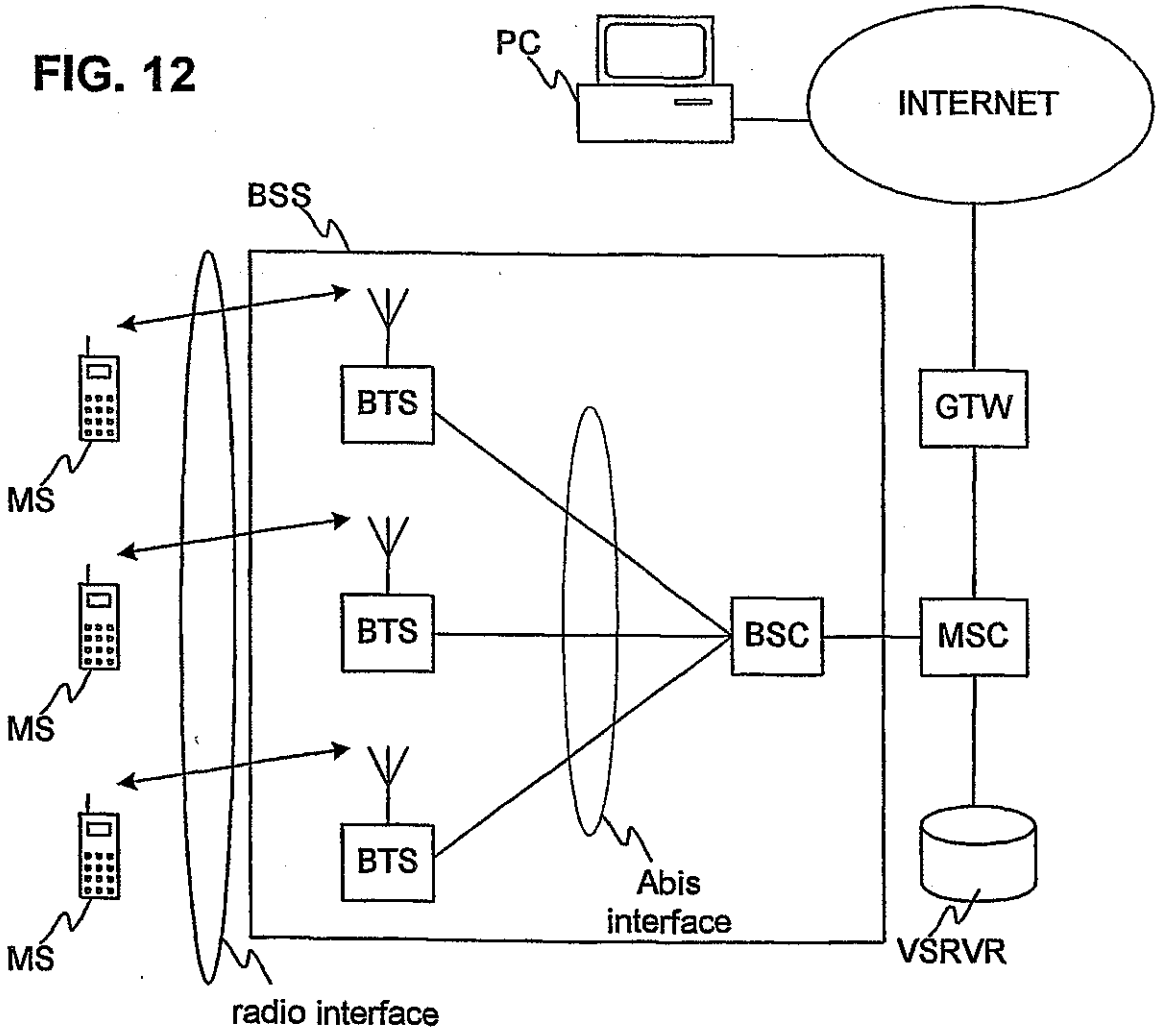

CAM
RAM
MS
UI
DPL KBD
µP
RF
ROM
ENC

FIG. 11

FIG. 12


PC
INTERNET
BSS
BTS
BTS
BTS
GTW
MSC
BSC
MS
MS
MS
Abis
interface
VSRVR
radio interface