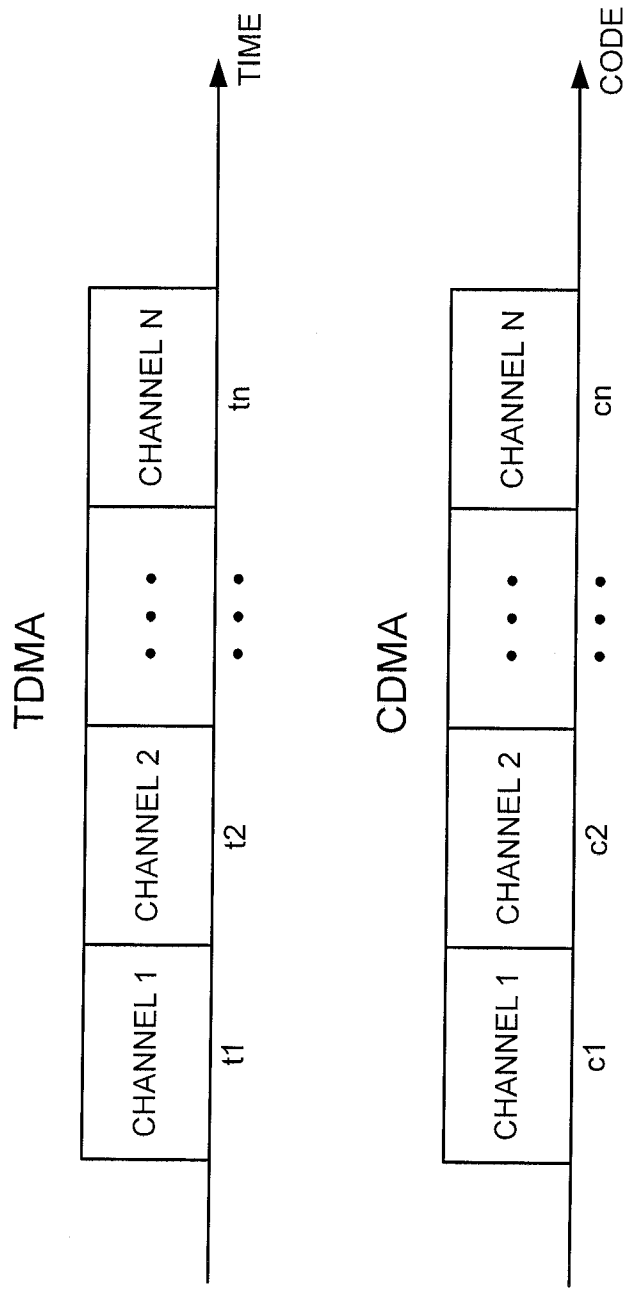

TDMA
CHANNEL 1
CHANNEL 2
CHANNEL N
t1
t2
tn
TIME
CDMA
CHANNEL 1
CHANNEL 2
CHANNEL N
c1
c2
cn
CODE

FIG. 1

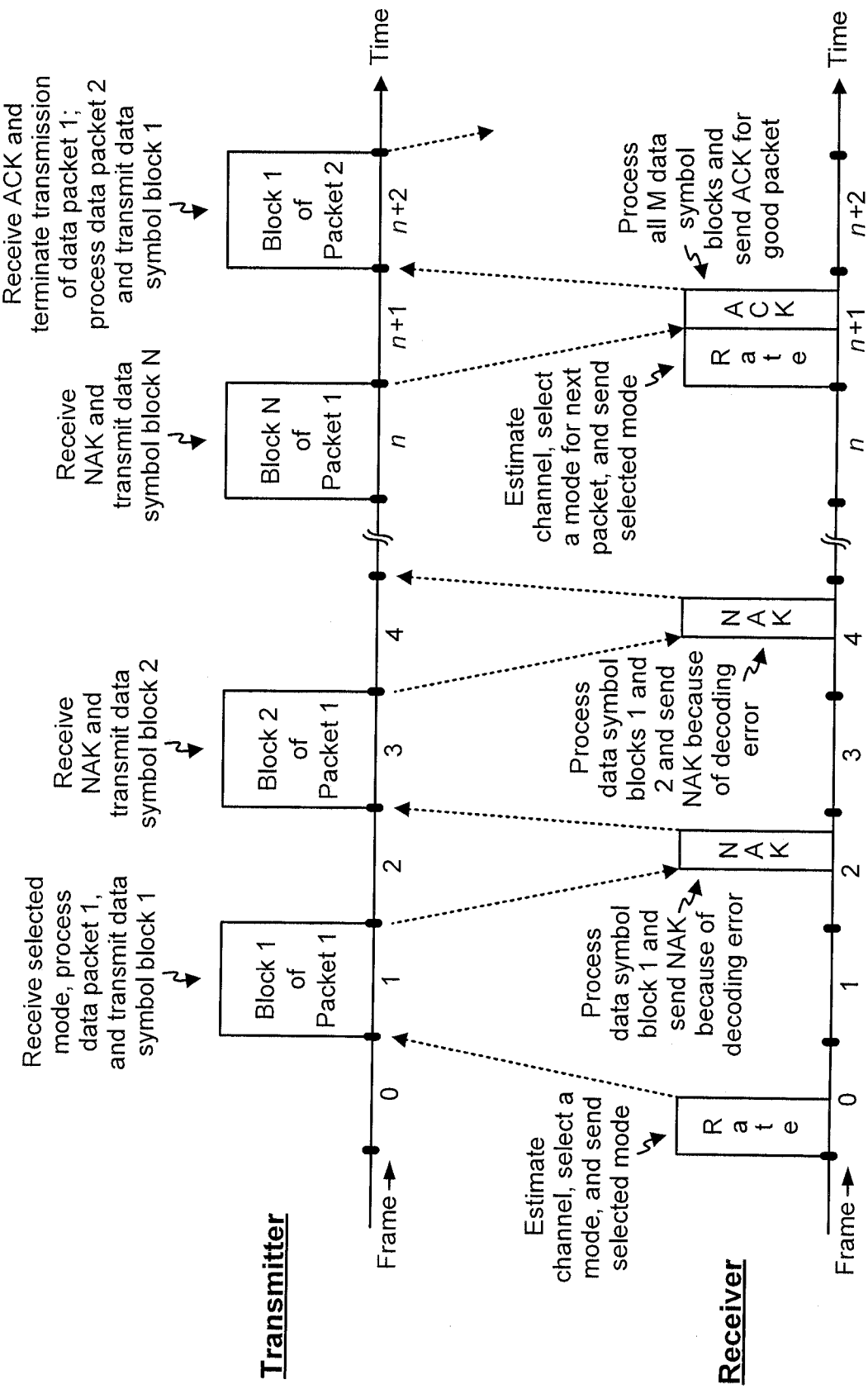

Transmitter
Receiver
Frame
Time
0
1
2
3
4
n
n+1
n+2
Block 1 of Packet 1
Block 2 of Packet 1
Block N of Packet 1
Block 1 of Packet 2
Rate
NAK
ACK
Receive selected mode, process data packet 1, and transmit data symbol block 1
Receive NAK and transmit data symbol block 2
Receive NAK and transmit data symbol block N
Receive ACK and terminate transmission of data packet 1; process data packet 2 and transmit data symbol block 1
Estimate channel, select a mode, and send selected mode
Process data symbol block 1 and send NAK because of decoding error
Process data symbol blocks 1 and 2 and send NAK because of decoding error
Estimate channel, select a mode for next packet, and send selected mode
Process all M data symbol blocks and send ACK for good packet

FIG. 2

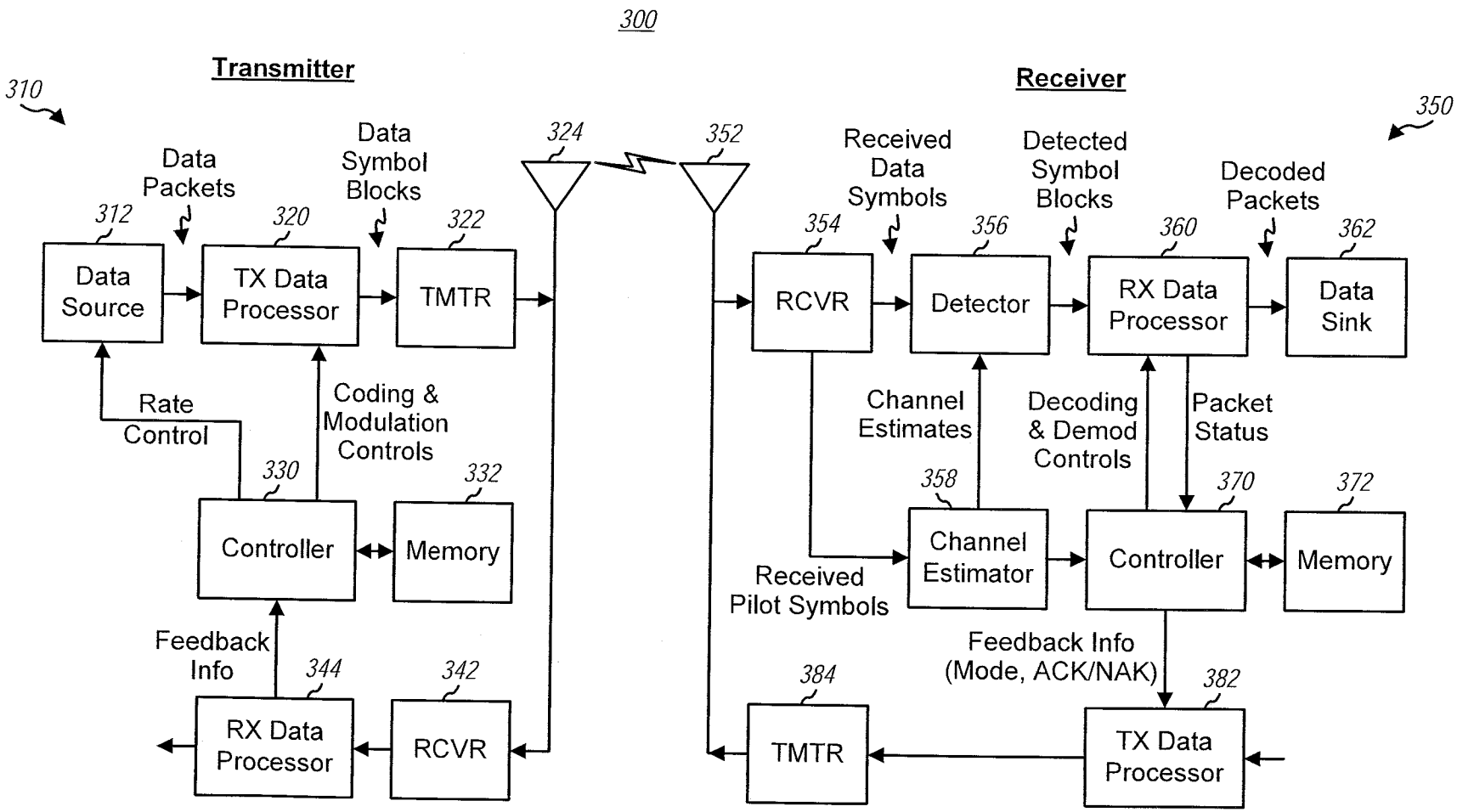

300
Transmitter
Receiver
310
350
Data Packets
Data Symbol Blocks
312
320
322
324
352
Data Source
TX Data Processor
TMTR
RCVR
Detector
RX Data Processor
Data Sink
354
356
360
362
Received Data Symbols
Detected Symbol Blocks
Decoded Packets
Rate Control
Coding & Modulation Controls
Channel Estimates
Decoding & Demod Controls
Packet Status
330
332
358
370
372
Controller
Memory
Channel Estimator
Controller
Memory
Received Pilot Symbols
Feedback Info
Feedback Info (Mode, ACK/NAK)
344
342
384
382
RX Data Processor
RCVR
TMTR
TX Data Processor

FIG. 3

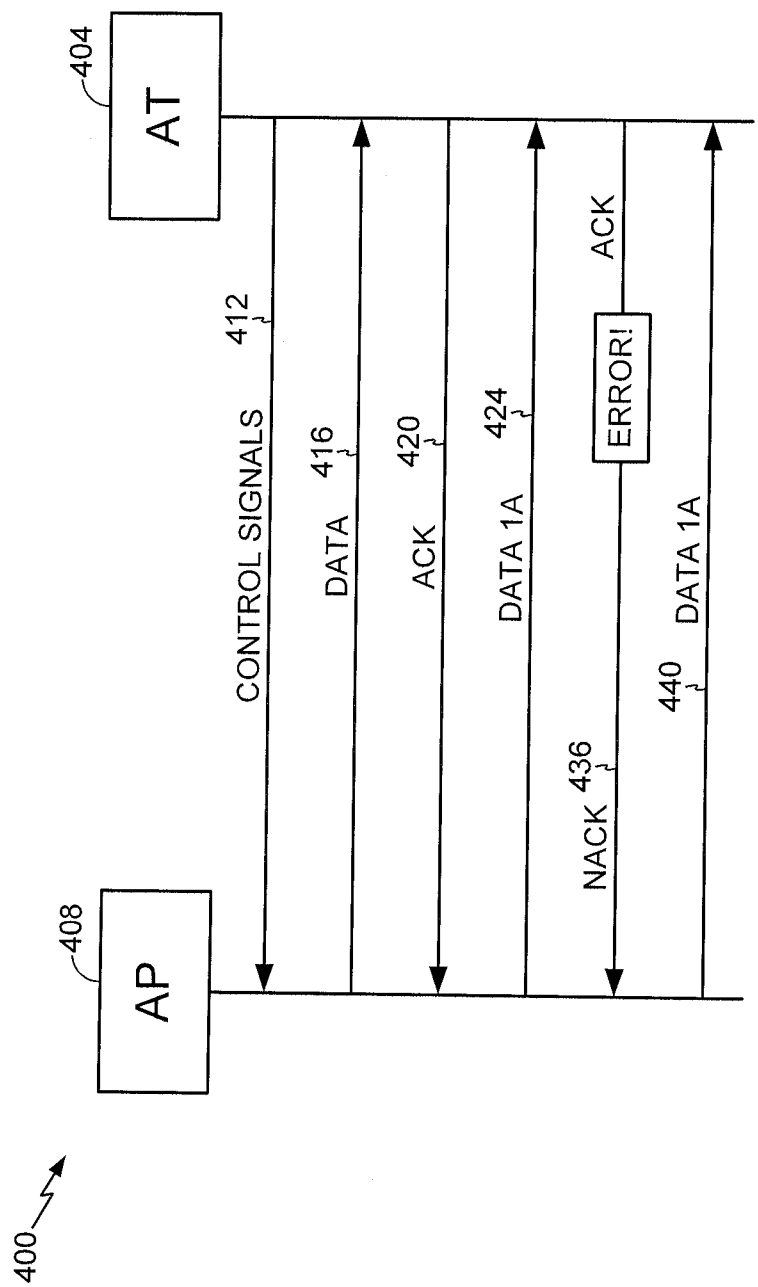

400
AP
408
AT
404
CONTROL SIGNALS
412
DATA
416
ACK
420
DATA 1A
424
NACK
436
ERROR!
ACK
DATA 1A
440

FIG. 4

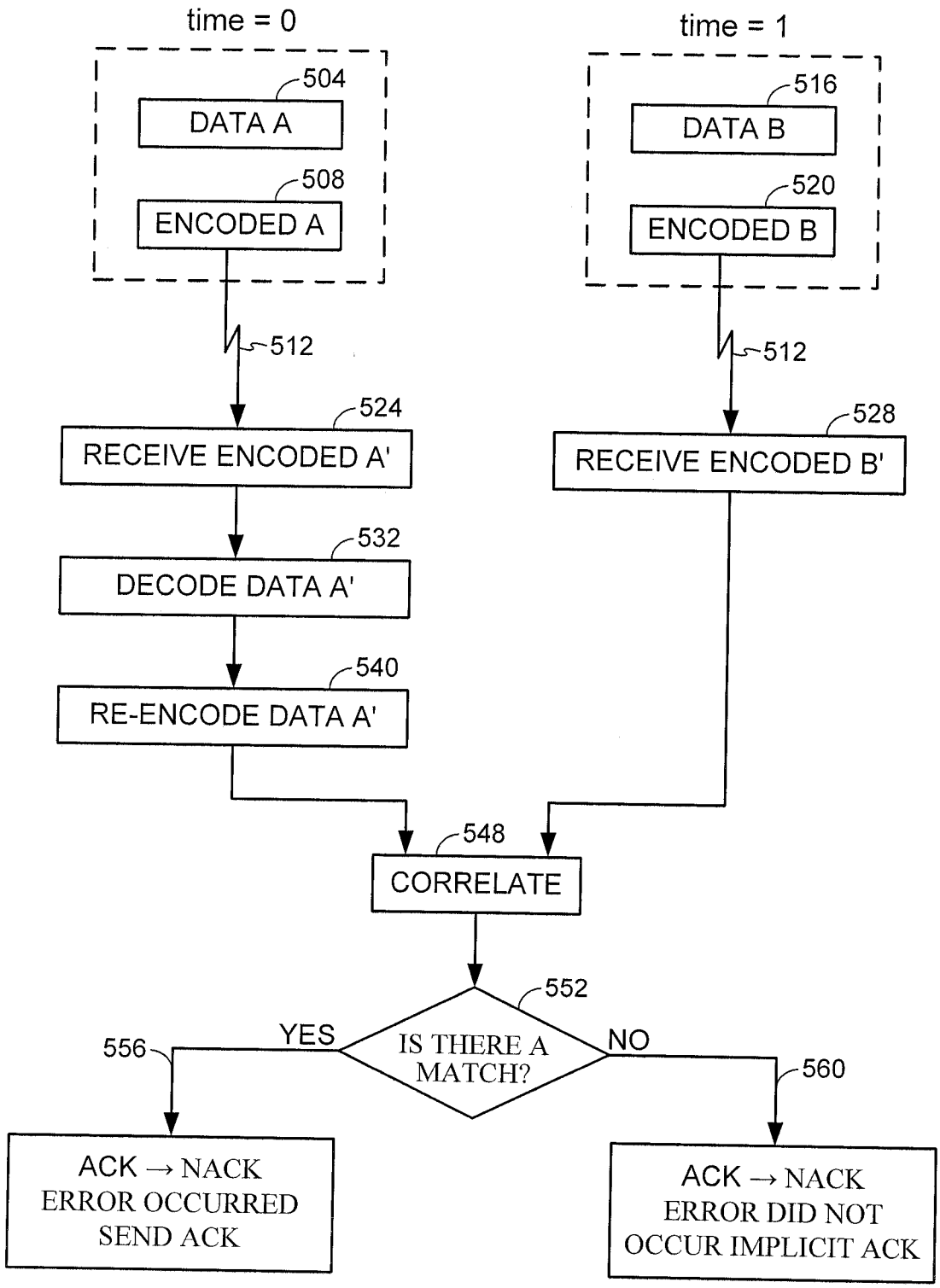

time = 0
504
DATA A
508
ENCODED A
512
524
RECEIVE ENCODED A'
532
DECODE DATA A'
540
RE-ENCODE DATA A'
time = 1
516
DATA B
520
ENCODED B
512
528
RECEIVE ENCODED B'
548
CORRELATE
552
IS THERE A MATCH?
YES
NO
556
ACK → NACK ERROR OCCURRED SEND ACK
560
ACK → NACK ERROR DID NOT OCCUR IMPLICIT ACK

FIG. 5

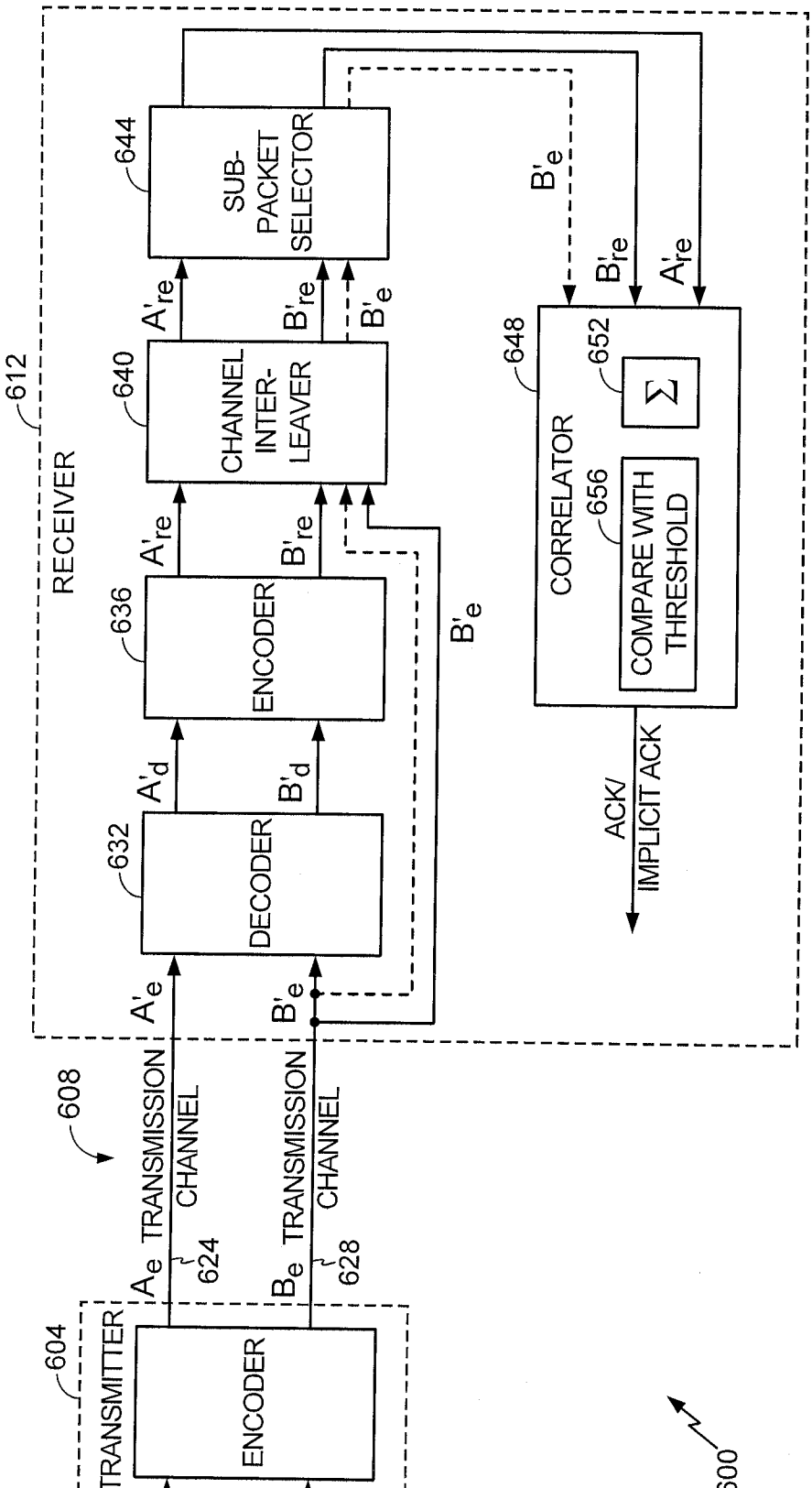

600
TRANSMITTER
604
ENCODER
DATA A
616
TIME
DATA B
620
A_e TRANSMISSION CHANNEL
624
B_e TRANSMISSION CHANNEL
628
608
RECEIVER
612
A'_e
B'_e
DECODER
632
A'_d
B'_d
ENCODER
636
A'_{re}
B'_{re}
CHANNEL INTER-LEAVER
640
A'_{re}
B'_{re}
B'_e
SUB-PACKET SELECTOR
644
B'_e
B'_{re}
A'_{re}
CORRELATOR
648
COMPARE WITH THRESHOLD
656
Σ
652
ACK/ IMPLICIT ACK

FIG. 6

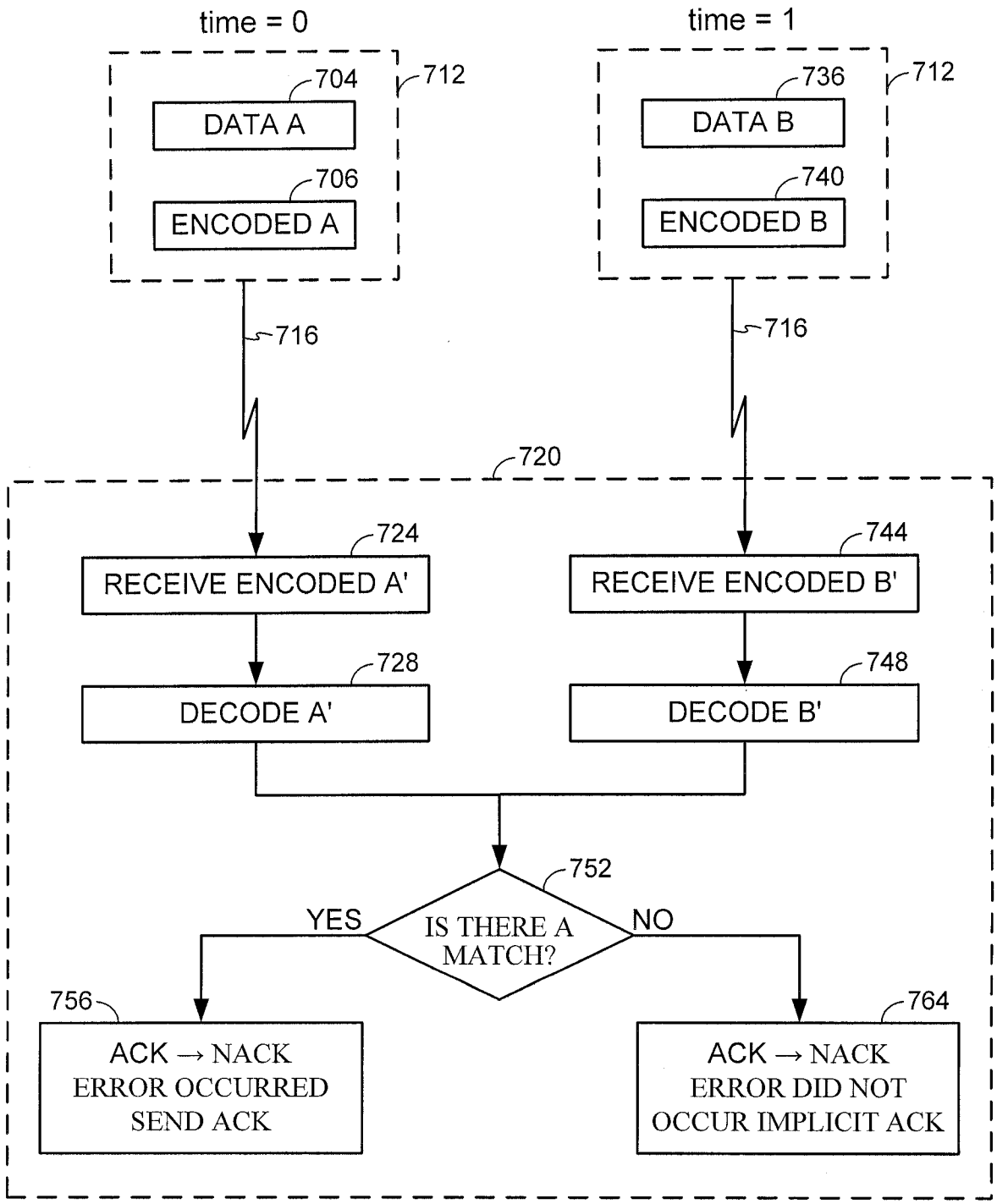

time = 0
time = 1
704
712
DATA A
706
ENCODED A
736
712
DATA B
740
ENCODED B
716
716
720
724
RECEIVE ENCODED A'
744
RECEIVE ENCODED B'
728
DECODE A'
748
DECODE B'
752
YES
IS THERE A MATCH?
NO
756
ACK → NACK ERROR OCCURRED SEND ACK
764
ACK → NACK ERROR DID NOT OCCUR IMPLICIT ACK

FIG. 7