FIG. 1

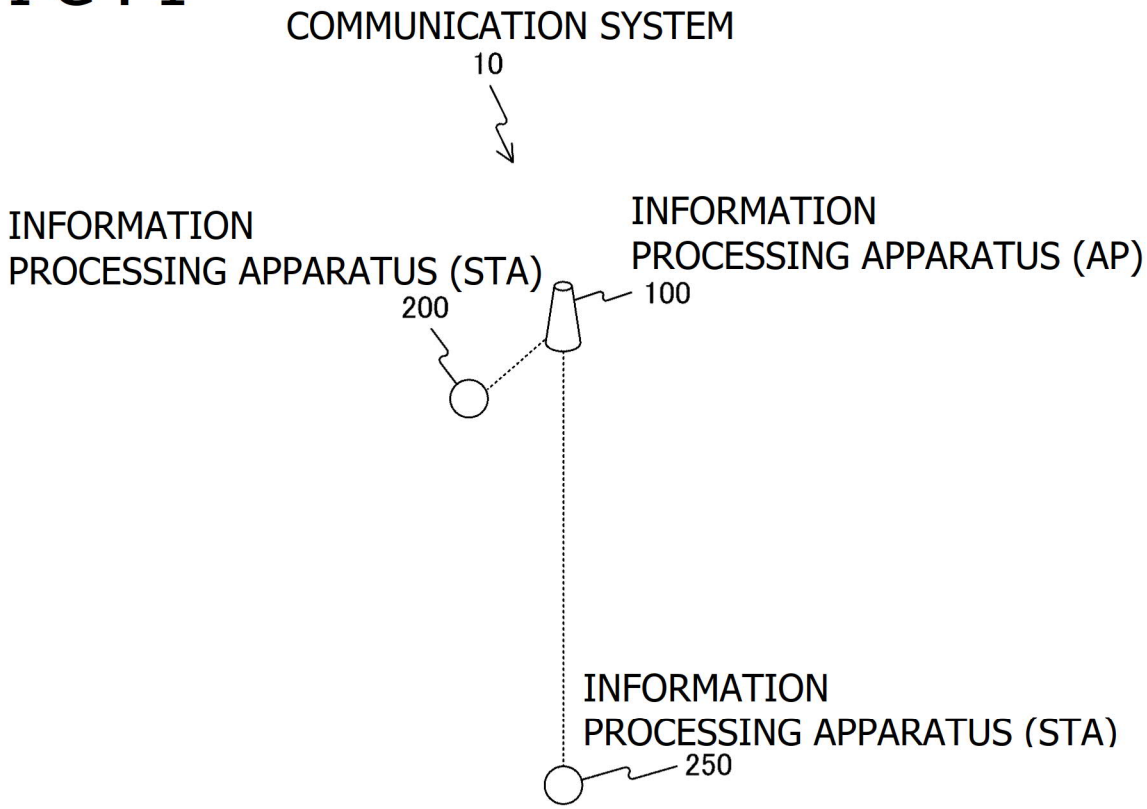

COMMUNICATION SYSTEM
10
INFORMATION
PROCESSING APPARATUS (STA)
200
INFORMATION
PROCESSING APPARATUS (AP)
100
INFORMATION
PROCESSING APPARATUS (STA)
250

FIG. 2

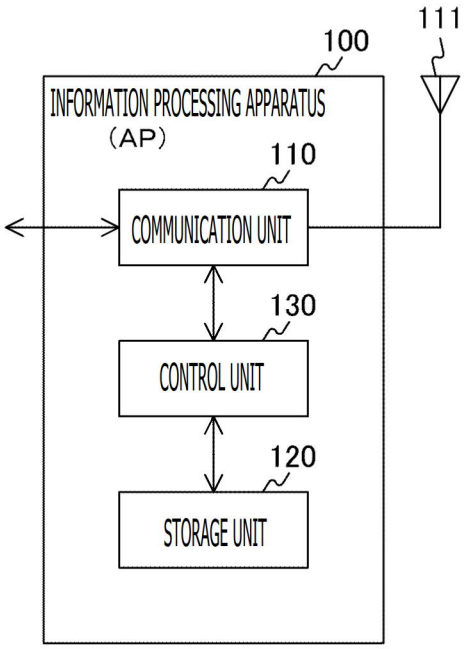

111
100
INFORMATION PROCESSING APPARATUS
(AP)
110
COMMUNICATION UNIT
130
CONTROL UNIT
120
STORAGE UNIT

FIG. 3

EXAMPLE OF OPERATION OF INFORMATION PROCESSING APPARATUS (PACKET TRANSMISSION/RECEPTION PROCESS)

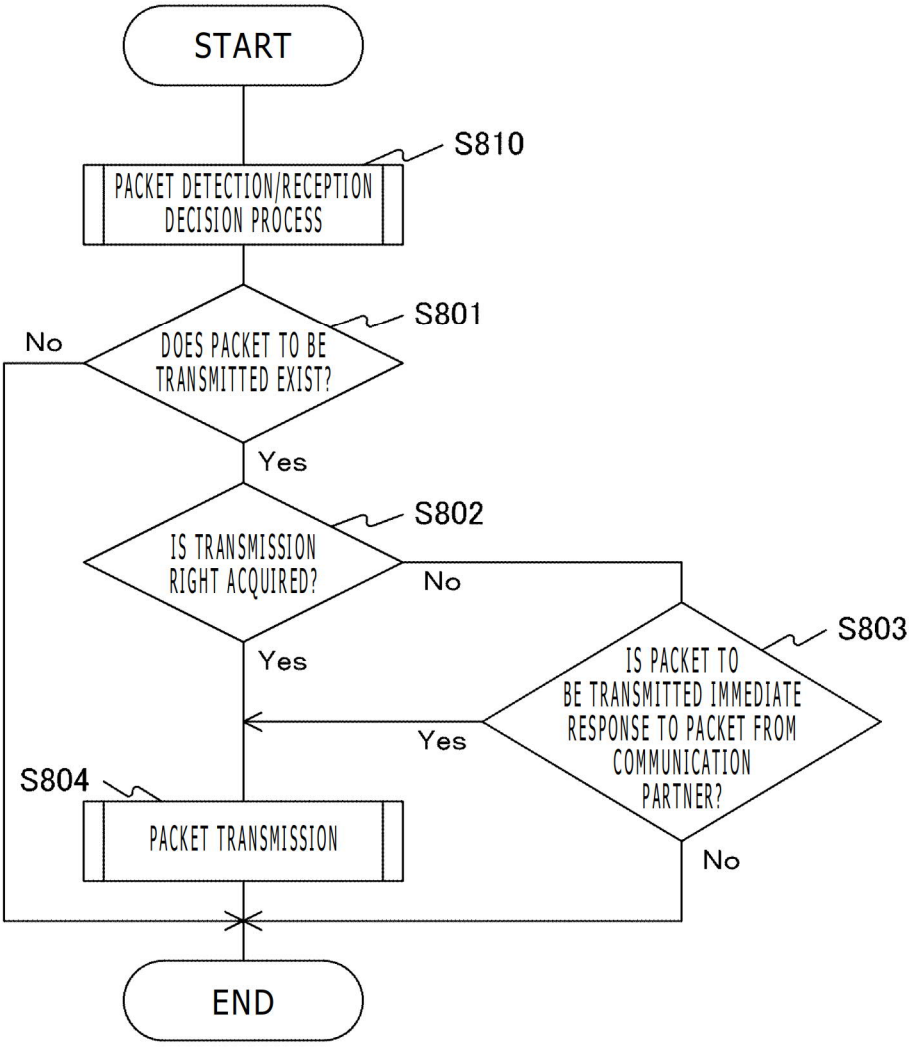


FIG. 4

PROCESS CLASSIFICATION TABLE

CRC CALCULATION RESULT OF PLCP HEADER IS ERROR-FREE			CRC CALCULATION RESULT OF PLCP HEADER IS ERROR
COLOR IN PLCP HEADER IS SAME AS BELONGING BSS	COLOR IN PLCP HEADER IS DIFFERENT FROM BELONGING BSS	COLOR INFORMATION DOES NOT EXIST	
RECEPTION	ABORTION OF RECEPTION	RECEPTION	ABORTION OF RECEPTION (ERROR) ※IFS＝EIFS

FIG. 5

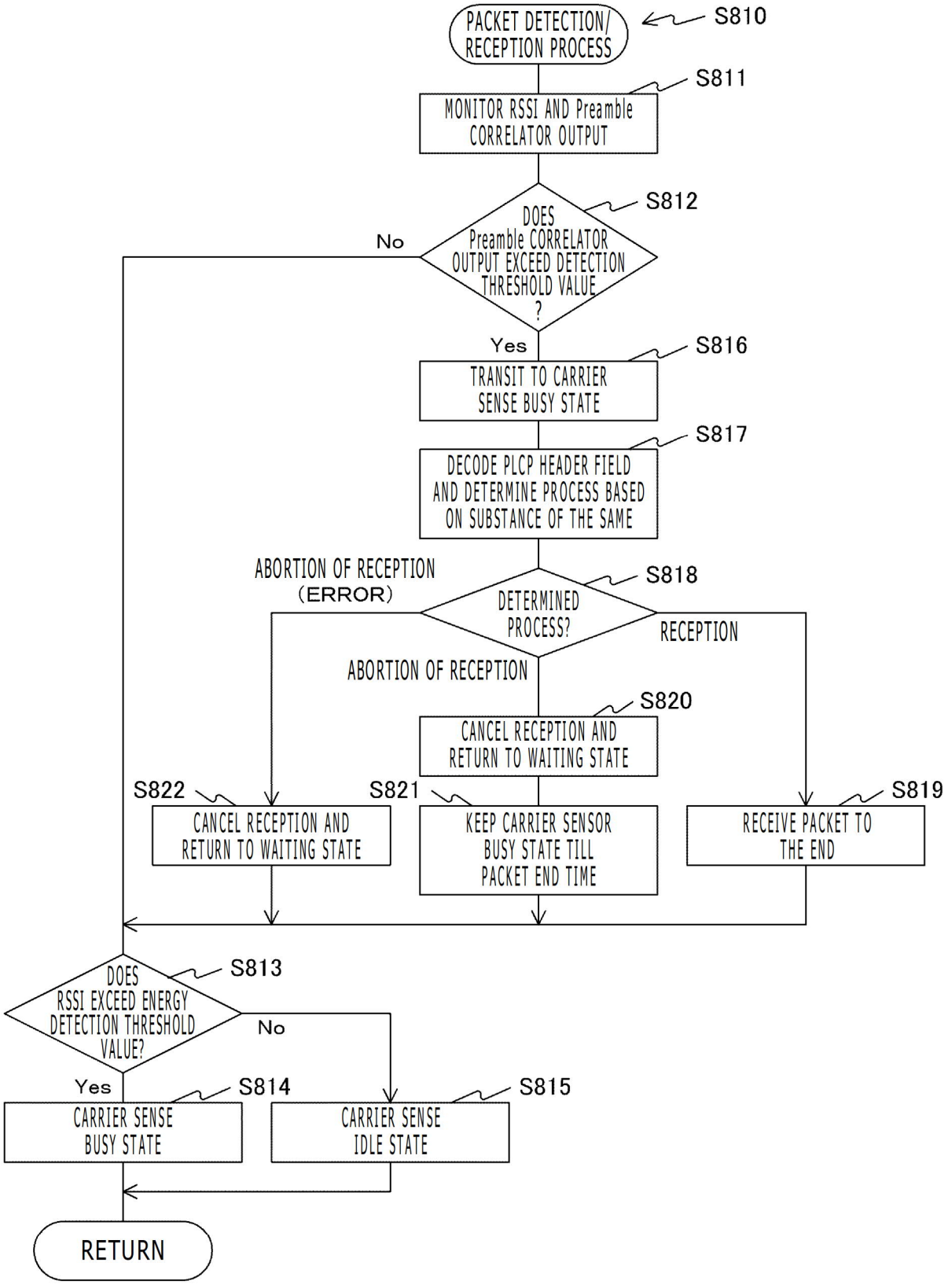

PACKET DETECTION/ RECEPTION PROCESS
S810
MONITOR RSSI AND Preamble CORRELATOR OUTPUT
S811
DOES Preamble CORRELATOR OUTPUT EXCEED DETECTION THRESHOLD VALUE ?
S812
No
Yes
TRANSIT TO CARRIER SENSE BUSY STATE
S816
DECODE PLCP HEADER FIELD AND DETERMINE PROCESS BASED ON SUBSTANCE OF THE SAME
S817
ABORTION OF RECEPTION (ERROR)
DETERMINED PROCESS?
S818
RECEPTION
ABORTION OF RECEPTION
CANCEL RECEPTION AND RETURN TO WAITING STATE
S820
S822
CANCEL RECEPTION AND RETURN TO WAITING STATE
S821
KEEP CARRIER SENSOR BUSY STATE TILL PACKET END TIME
S819
RECEIVE PACKET TO THE END
DOES RSSI EXCEED ENERGY DETECTION THRESHOLD VALUE?
S813
No
Yes
S814
CARRIER SENSE BUSY STATE
S815
CARRIER SENSE IDLE STATE
RETURN

FIG. 6

PROCESS CLASSIFICATION TABLE

	CRC CALCULATION RESULT OF PLCP HEADER IS ERROR-FREE			CRC CALCULATION RESULT OF PLCP HEADER IS ERROR
	COLOR IN PLCP HEADER IS SAME AS BELONGING BSS	COLOR IN PLCP HEADER IS DIFFERENT FROM BELONGING BSS	COLOR INFORMATION DOES NOT EXIST	
CORRELATOR OUTPUT STRENGTH IS LOWER THAN EXTENDED CCA THRESHOLD VALUE	RECEPTION	ABORTION OF RECEPTION (IDLE)	RECEPTION	ABORTION OF RECEPTION (ERROR) ※IFS=EIFS
CORRELATOR OUTPUT STRENGTH IS EQUAL TO OR HIGHER THAN EXTENDED CCA THRESHOLD VALUE	RECEPTION	ABORTION OF RECEPTION (BUSY)	RECEPTION	

FIG. 7

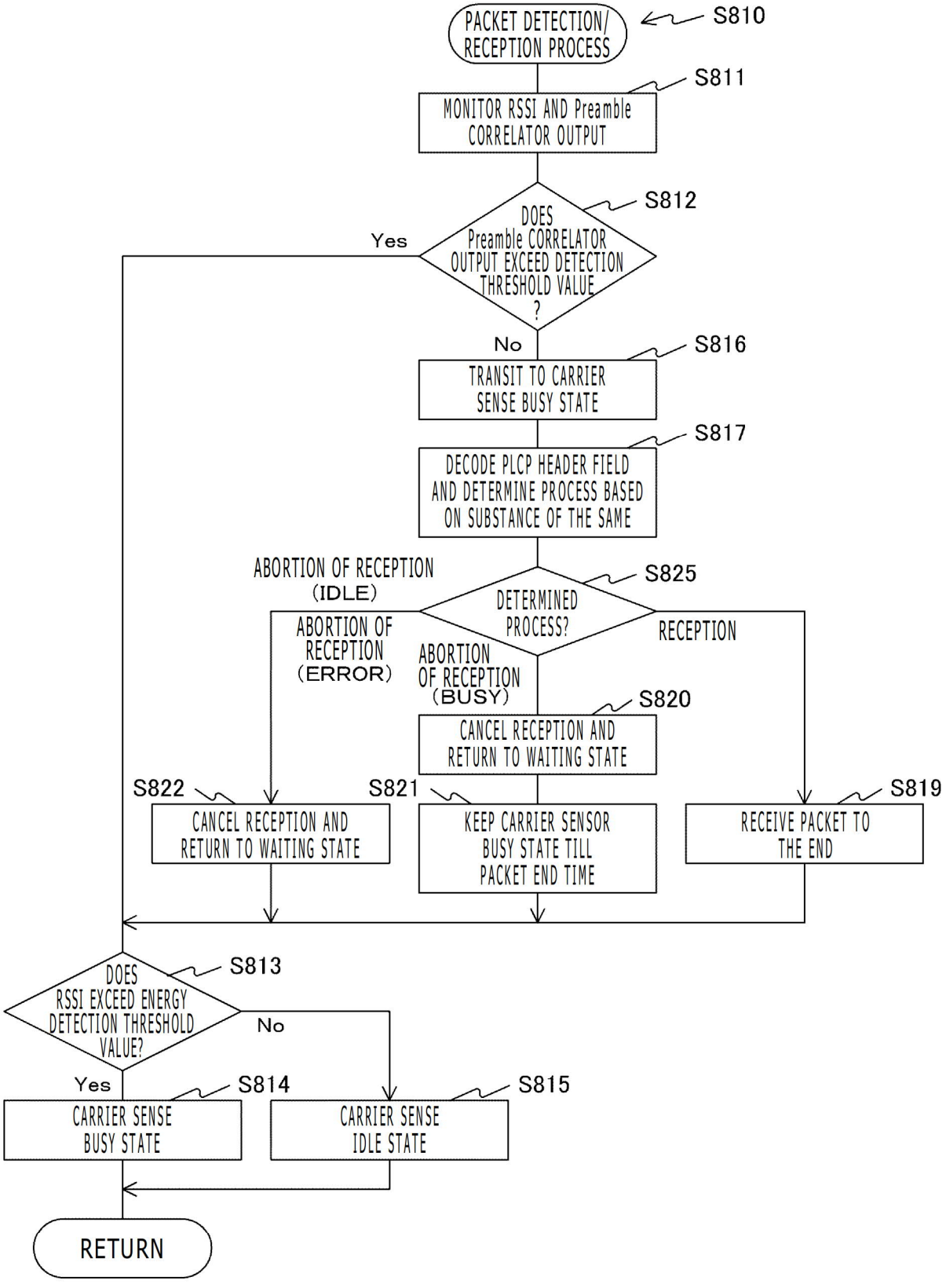

PACKET DETECTION/ RECEPTION PROCESS
S810
MONITOR RSSI AND Preamble CORRELATOR OUTPUT
S811
DOES Preamble CORRELATOR OUTPUT EXCEED DETECTION THRESHOLD VALUE ?
S812
Yes
No
TRANSIT TO CARRIER SENSE BUSY STATE
S816
DECODE PLCP HEADER FIELD AND DETERMINE PROCESS BASED ON SUBSTANCE OF THE SAME
S817
ABORTION OF RECEPTION (IDLE)
DETERMINED PROCESS?
S825
ABORTION OF RECEPTION (ERROR)
ABORTION OF RECEPTION (BUSY)
RECEPTION
CANCEL RECEPTION AND RETURN TO WAITING STATE
S820
S822
CANCEL RECEPTION AND RETURN TO WAITING STATE
S821
KEEP CARRIER SENSOR BUSY STATE TILL PACKET END TIME
S819
RECEIVE PACKET TO THE END
DOES RSSI EXCEED ENERGY DETECTION THRESHOLD VALUE?
S813
Yes
No
S814
CARRIER SENSE BUSY STATE
S815
CARRIER SENSE IDLE STATE
RETURN

FIG. 8

EXAMPLE OF OPERATION OF INFORMATION PROCESSING APPARATUS (AP) AND INFORMATION PROCESSING APPARATUS (STA)

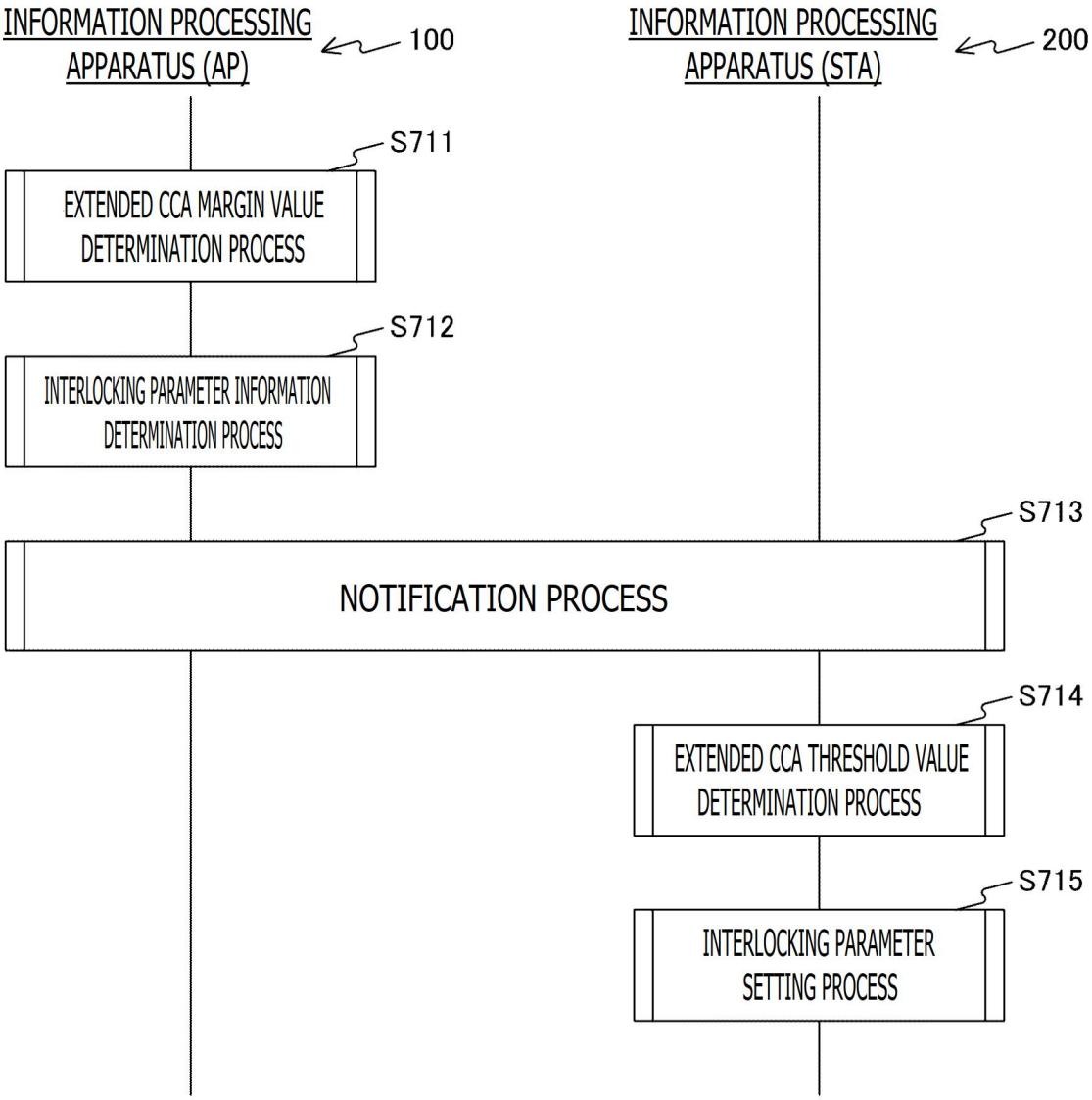


FIG. 9

FLOW OF PROCESSING OF COMPONENTS

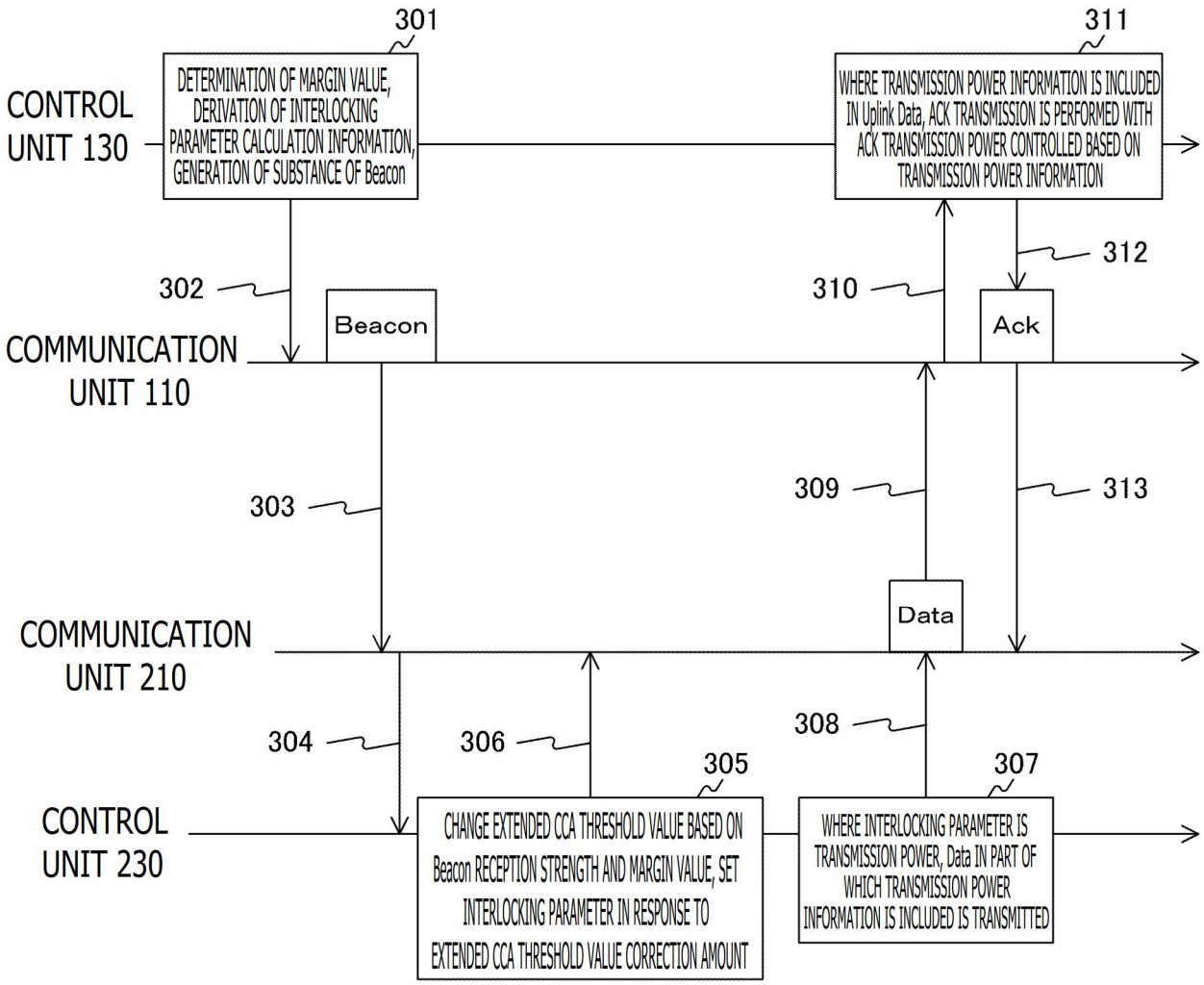


FIG.10

MARGIN VALUE (dB)	TRANSMISSION PARAMETER 1 OF CHANGE TARGET		TRANSMISSION PARAMETER 2 OF CHANGE TARGET	
	TYPE	CHANGED COEFFICIENT VALUE	TYPE	CHANGED COEFFICIENT VALUE
40	TxPower	$\alpha=1$、$\beta=10$	AIFSN	$\gamma=10$
30	TxPower	$\alpha=1$、$\beta=8$	AIFSN	$\gamma=10$
20	TxPower	$\alpha=1.5$、$\beta=5$	AIFSN	$\gamma=5$
10	TxPower	$\alpha=2$、$\beta=3$	AIFSN	$\gamma=3$

FIG. 11

EXAMPLE OF FORMAT OF BEACON

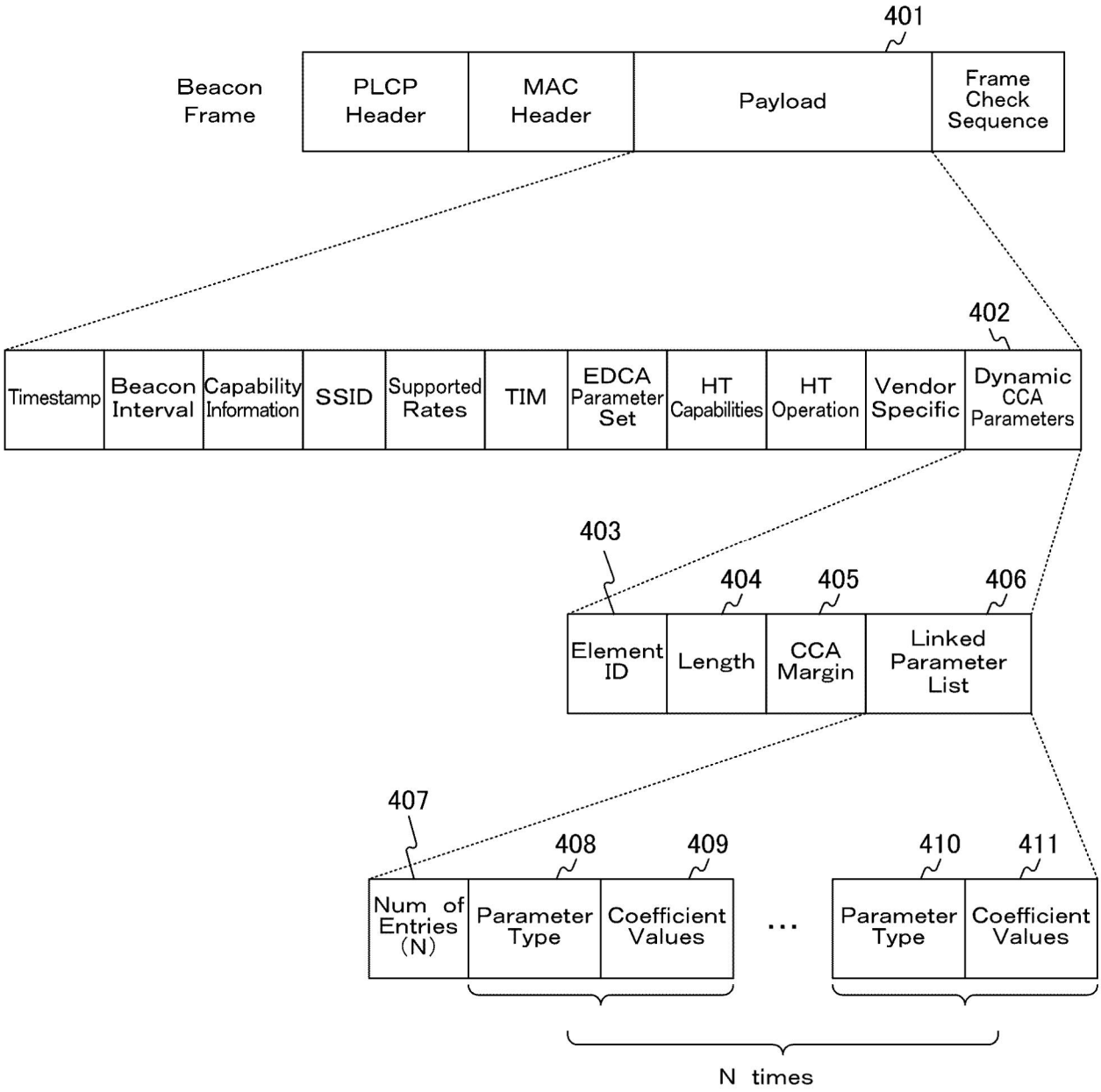


FIG. 12

EXAMPLE OF EXTENDED CCA THRESHOLD VALUE DETERMINATION PROCESS

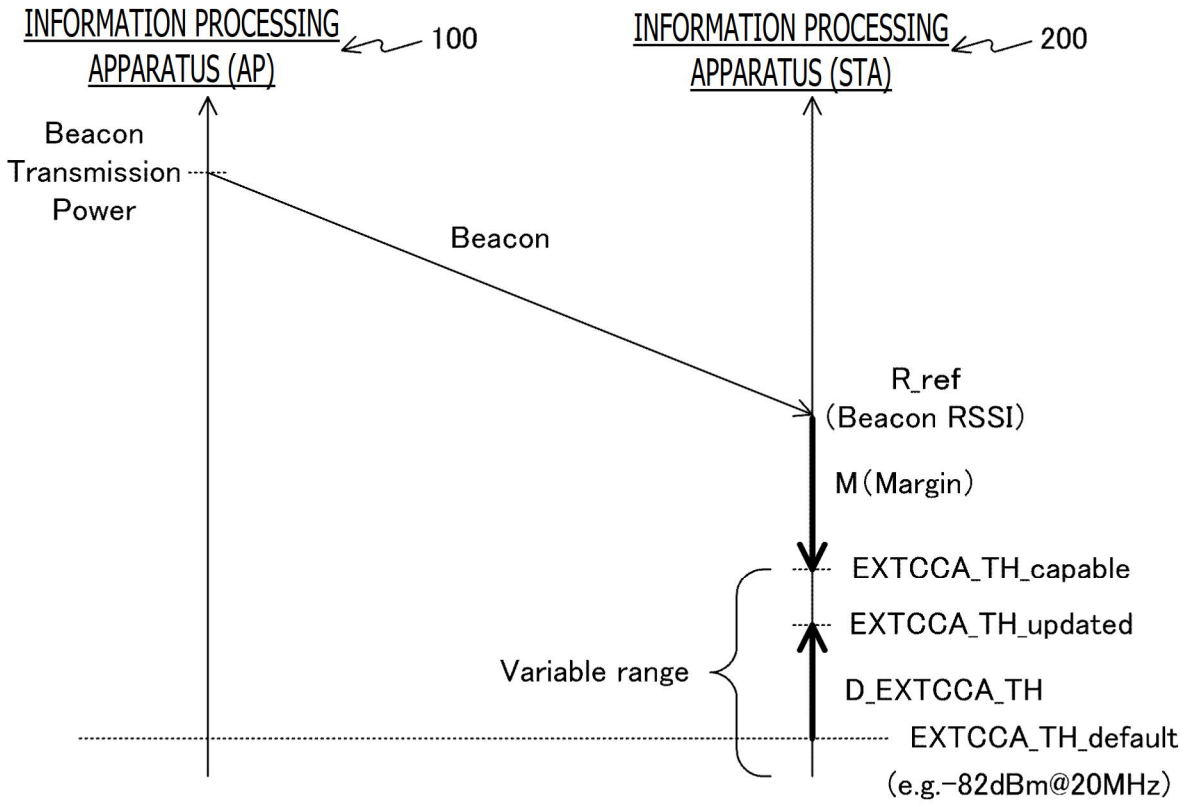


FIG. 13

EXAMPLE OF FORMAT OF FRAME USED IN TRANSMISSION

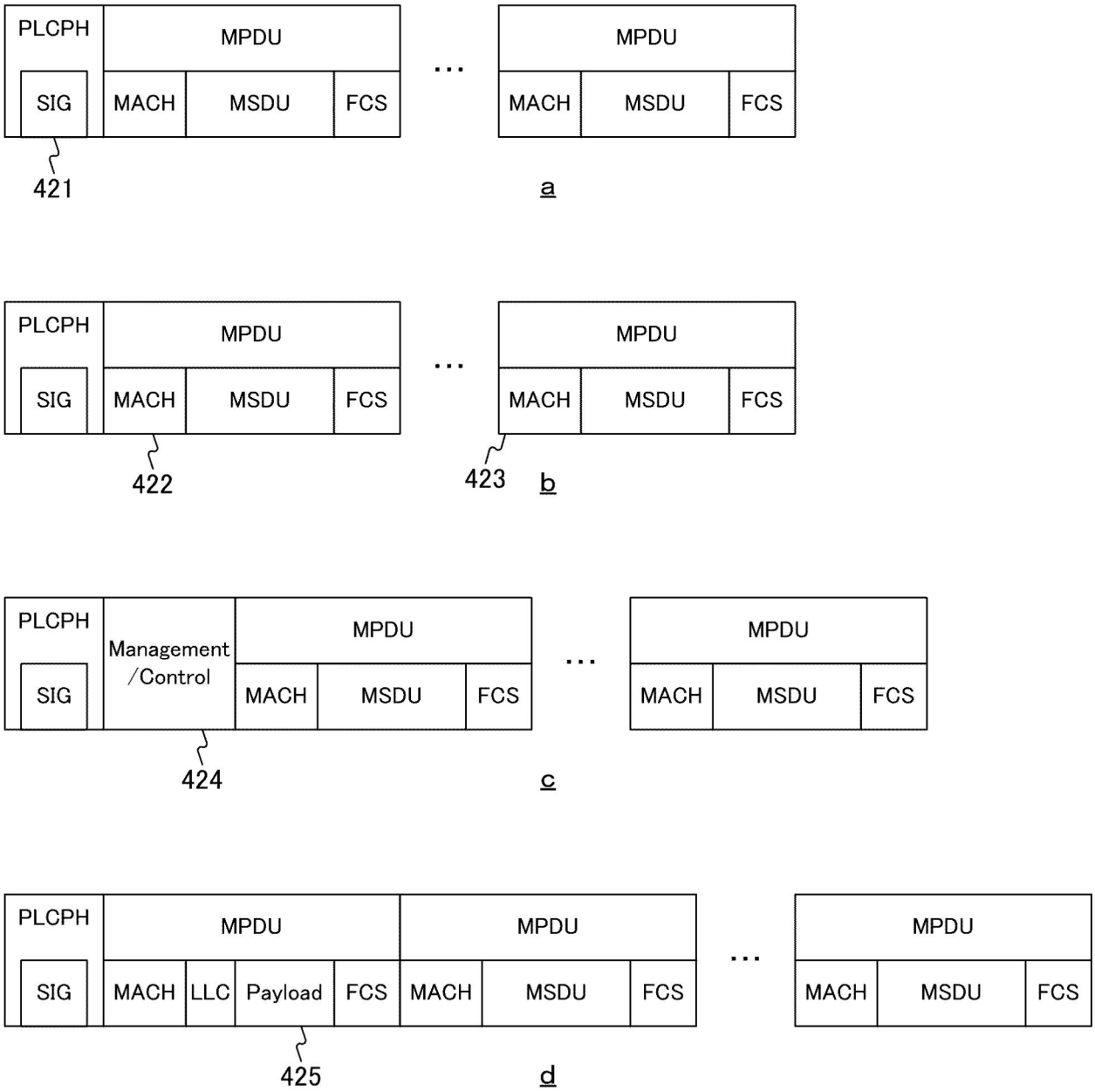


FIG. 14

MODE NUMBER	MARGIN VALUE (dB)	TRANSMISSION PARAMETER 1 OF CHANGE TARGET		TRANSMISSION PARAMETER 2 OF CHANGE TARGET	
		TYPE	CHANGED COEFFICIENT VALUE	TYPE	CHANGED COEFFICIENT VALUE
1	40	TxPower	$\alpha=1$、$\beta=10$	AIFSN	$\gamma=10$
2	30	TxPower	$\alpha=1$、$\beta=8$	AIFSN	$\gamma=10$
3	20	TxPower	$\alpha=1.5$、$\beta=5$	AIFSN	$\gamma=5$
4	10	TxPower	$\alpha=2$、$\beta=3$	AIFSN	$\gamma=3$

FIG. 15

EXAMPLE OF FORMAT OF BEACON

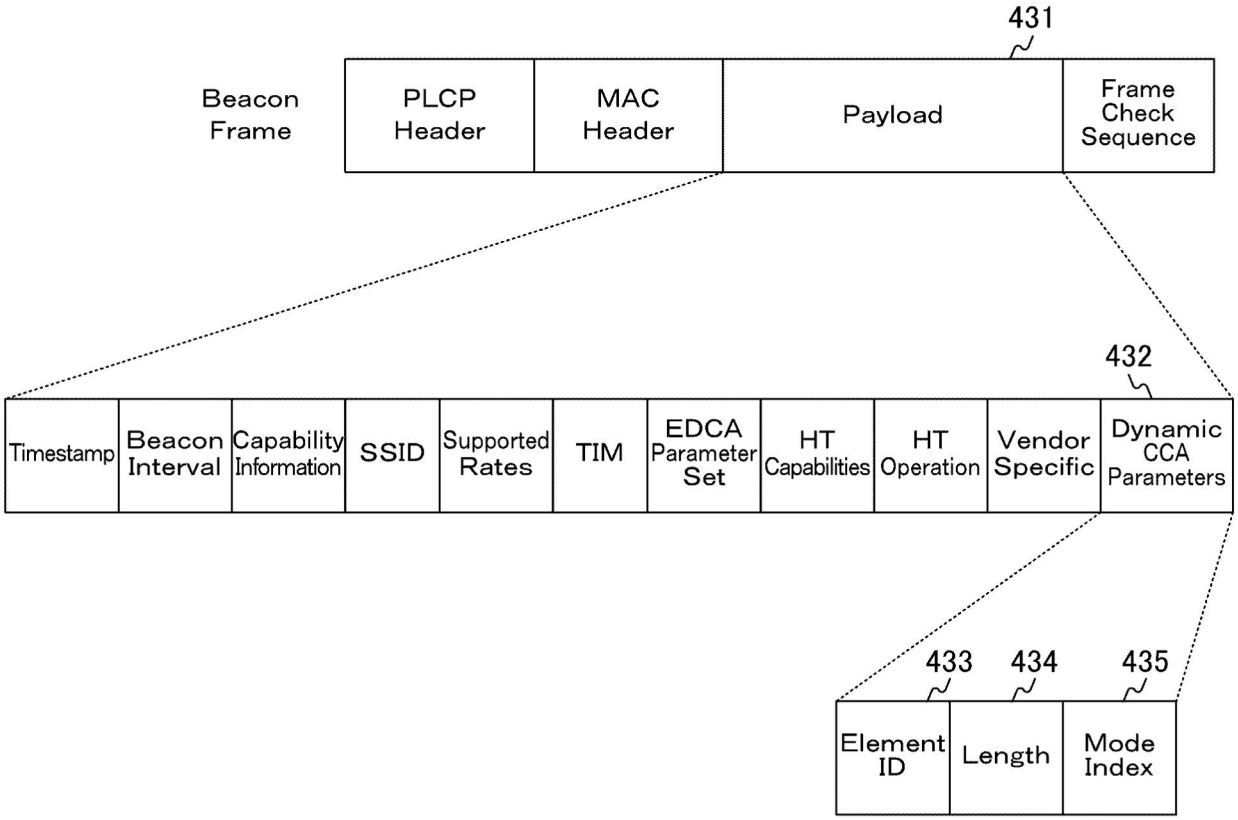


FIG. 16

EXAMPLE OF FORMAT OF BEACON

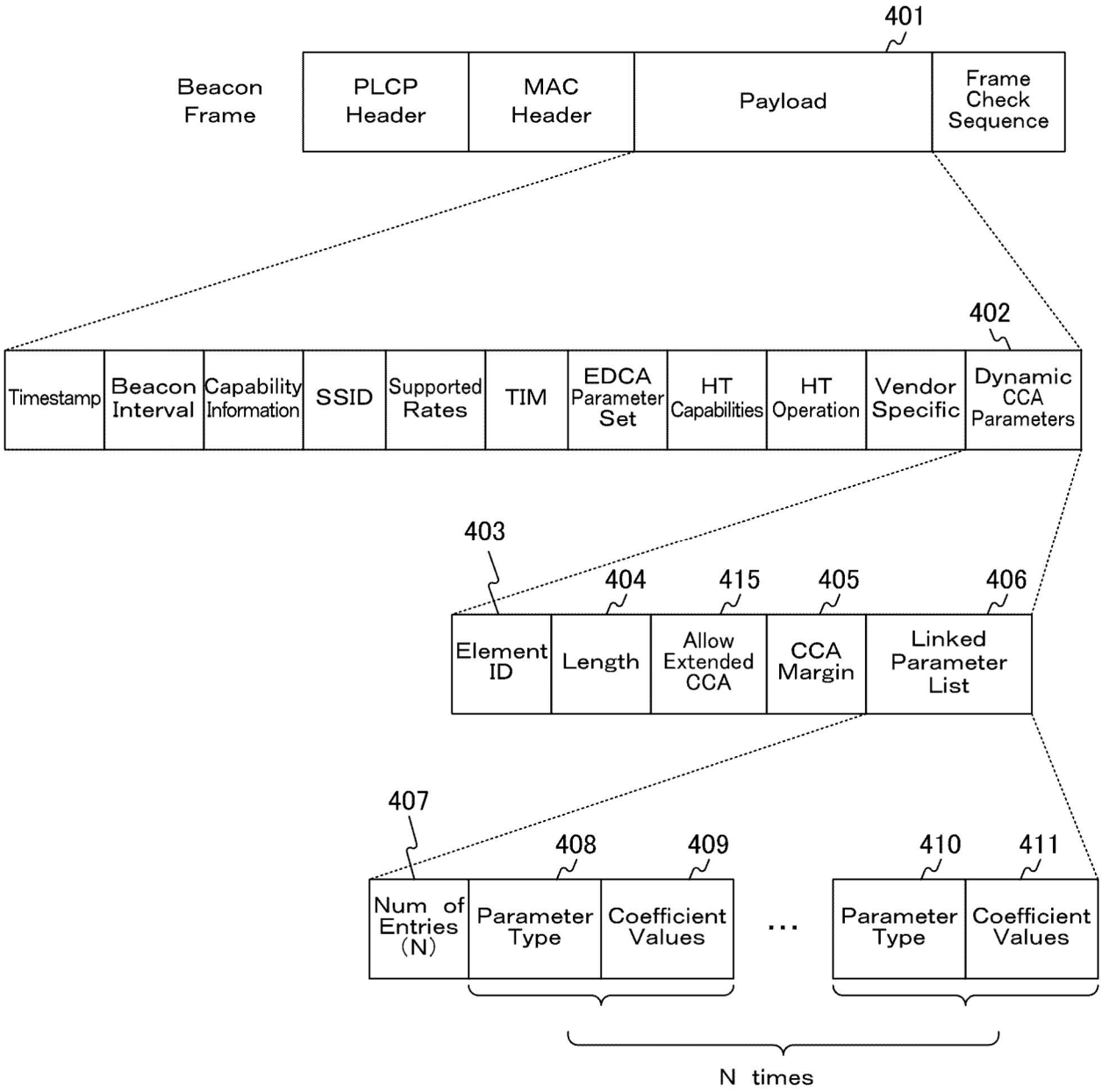


FIG. 17

EXAMPLE OF FORMAT OF BEACON

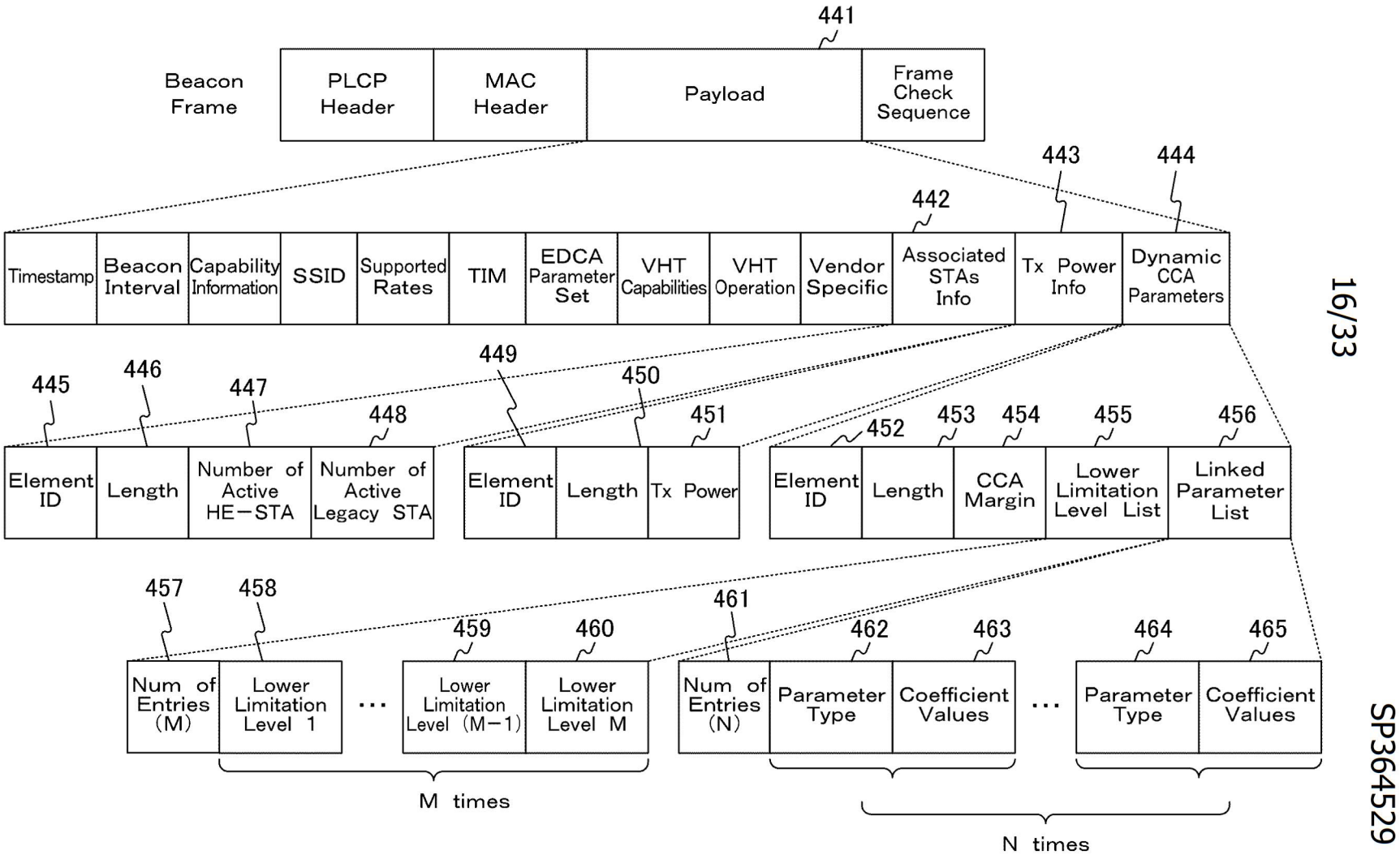


FIG. 18

EXAMPLE OF OPERATION OF INFORMATION PROCESSING APPARATUS (AP) AND INFORMATION PROCESSING APPARATUS (STA)

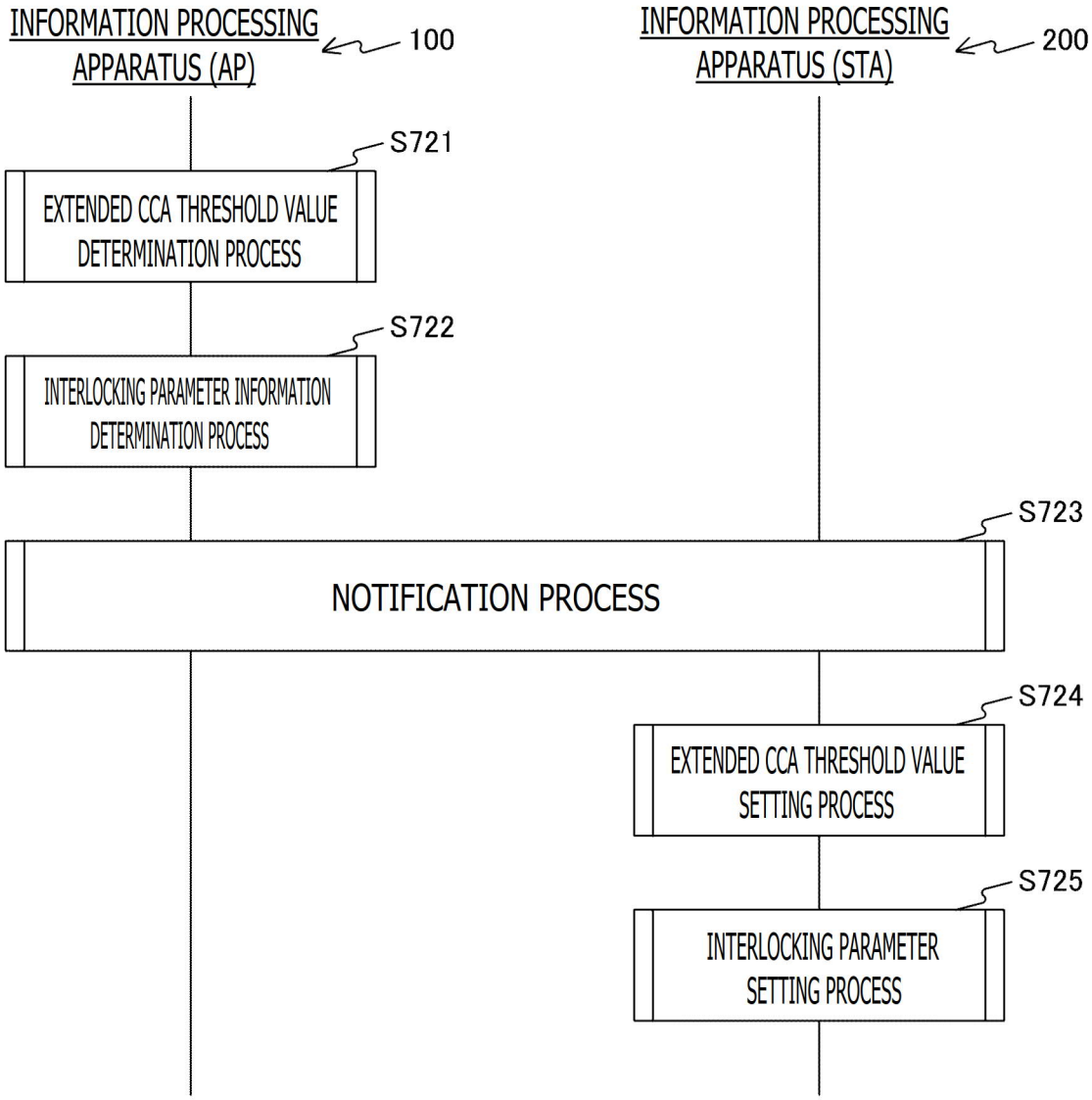


FIG. 19

EXAMPLE OF FORMAT OF BEACON

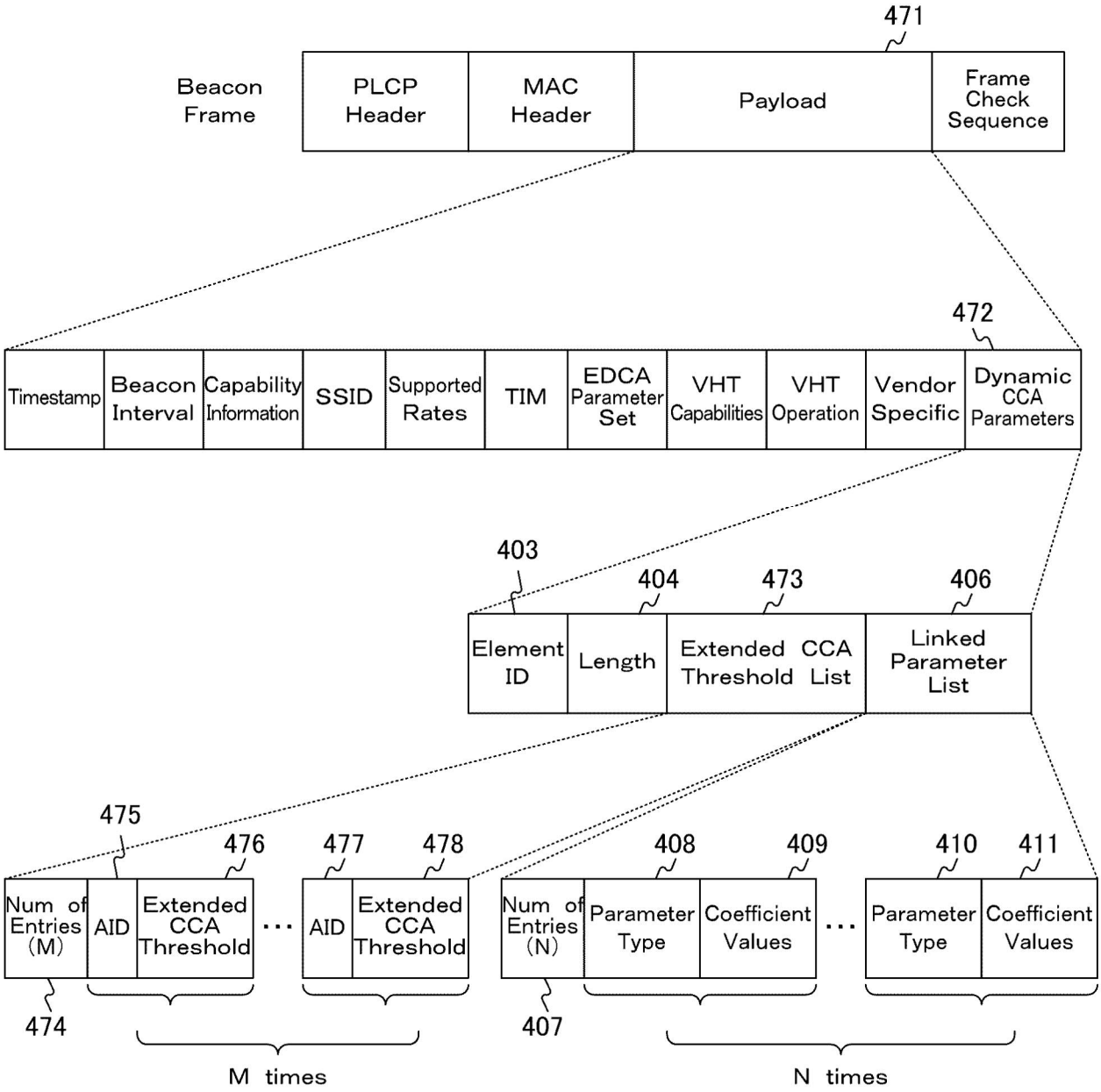
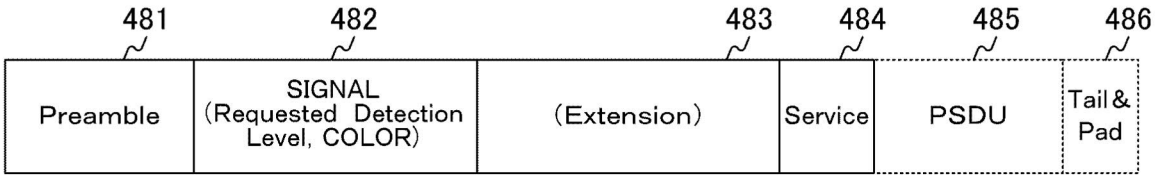
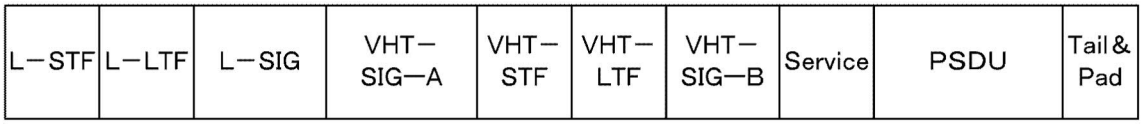


FIG. 20

EXAMPLE OF FORMAT OF PLCP HEADER



a



b

FIG. 21

EXAMPLE OF SETTING OF DESIRED DETECTION LEVEL

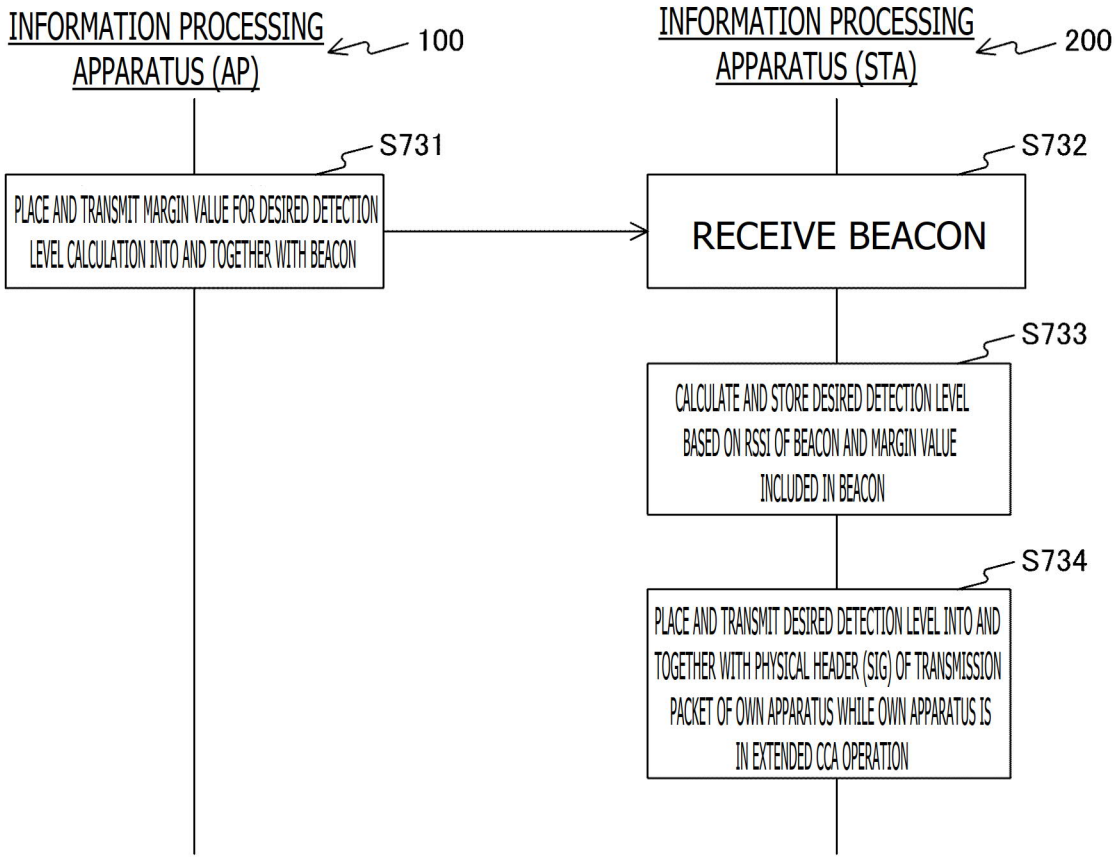


FIG. 22

EXAMPLE OF FORMAT OF BEACON

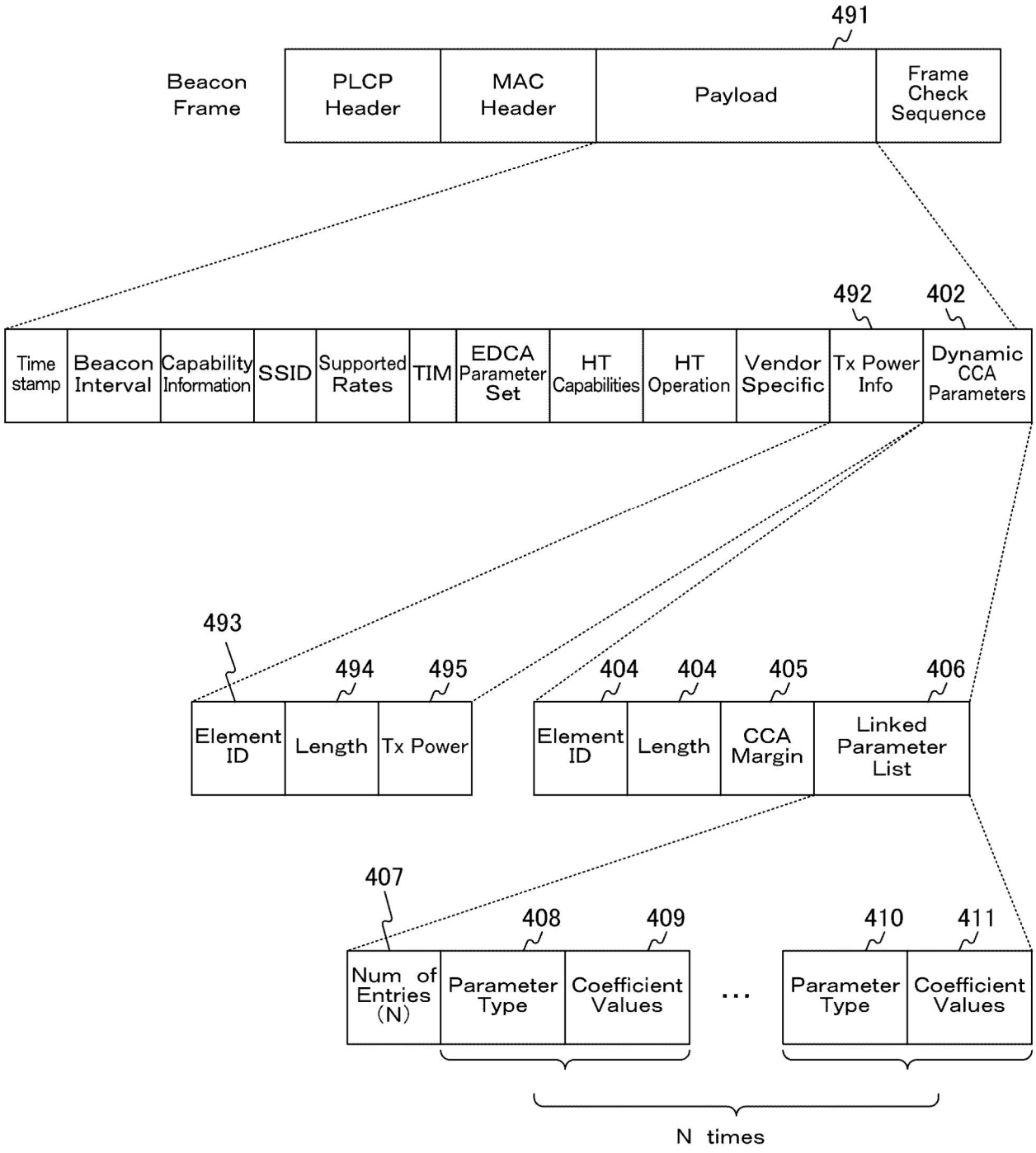


FIG. 23

EXAMPLE OF OPERATION OF INFORMATION PROCESSING APPARATUS (AP) AND INFORMATION PROCESSING APPARATUS (STA)

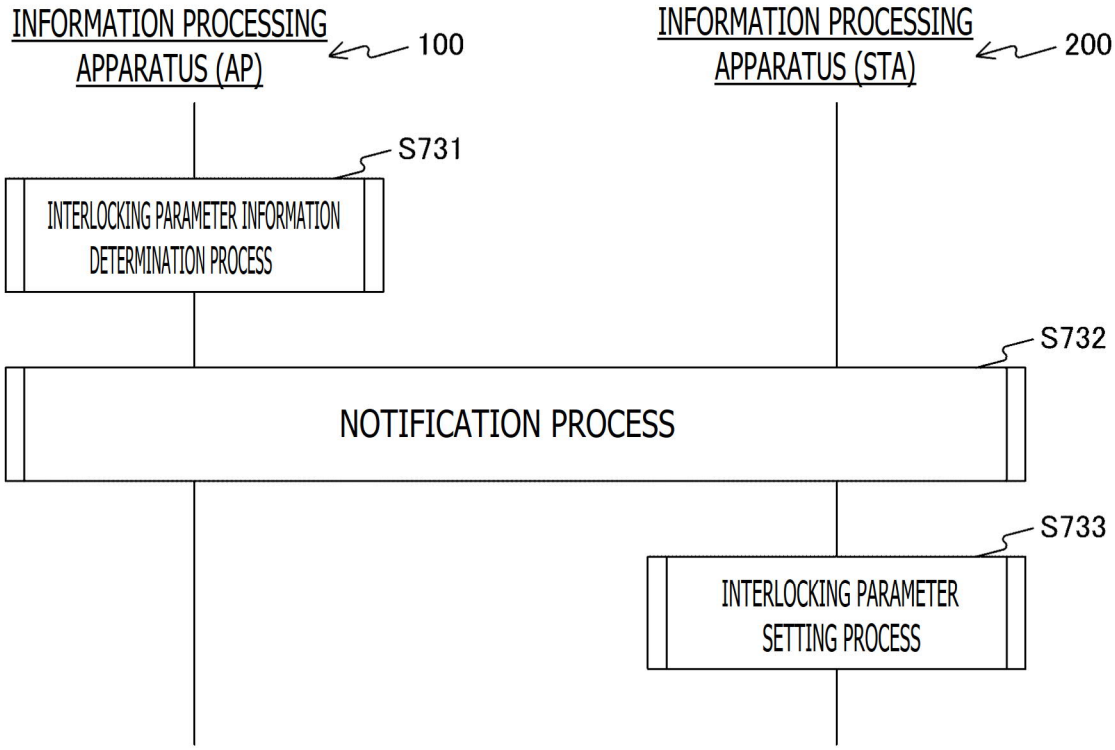


FIG. 24

EXAMPLE OF OPERATION OF INFORMATION PROCESSING APPARATUS (AP) AND INFORMATION PROCESSING APPARATUS (STA)

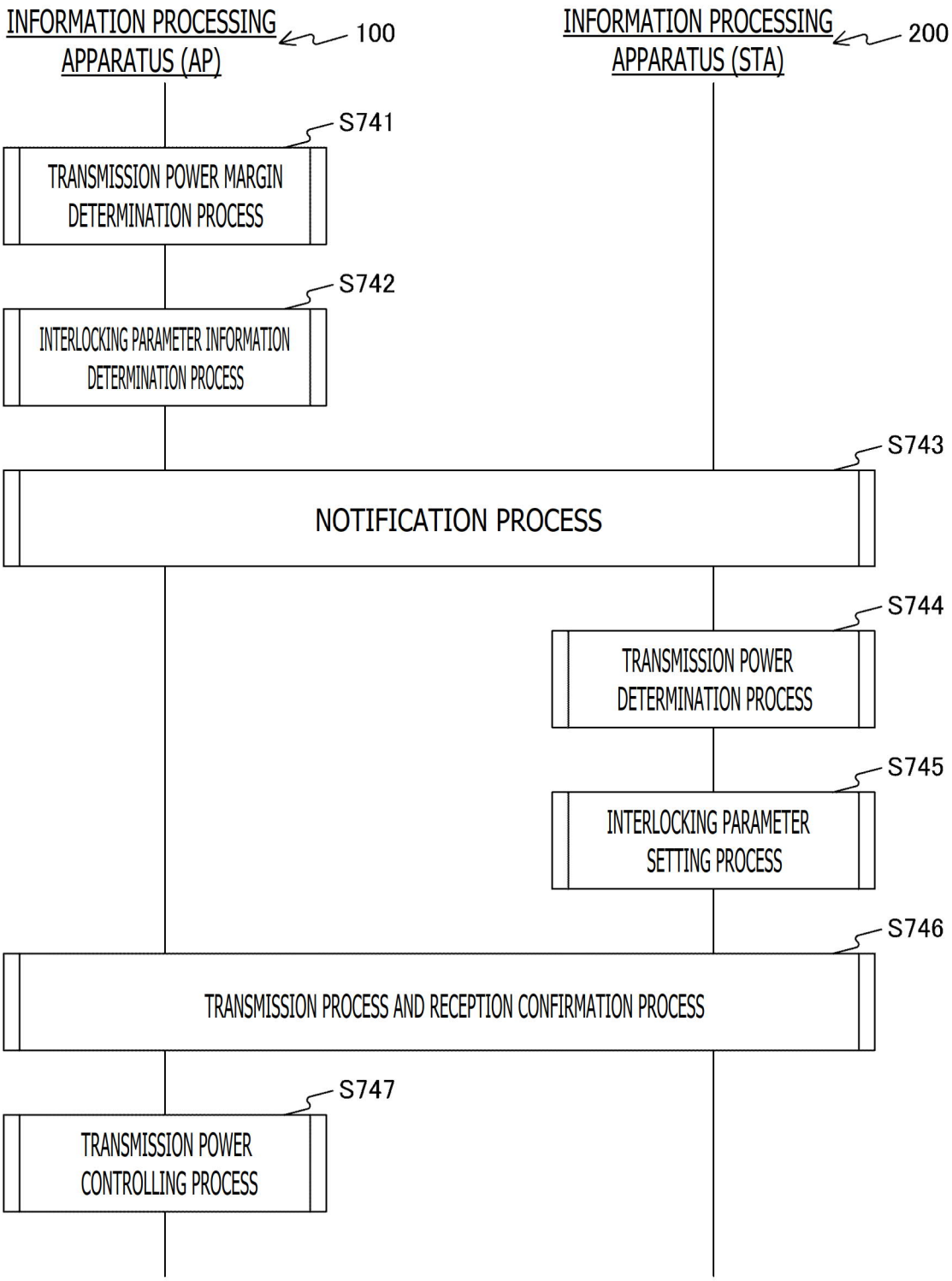


FIG. 25

EXAMPLE OF FORMAT OF BEACON

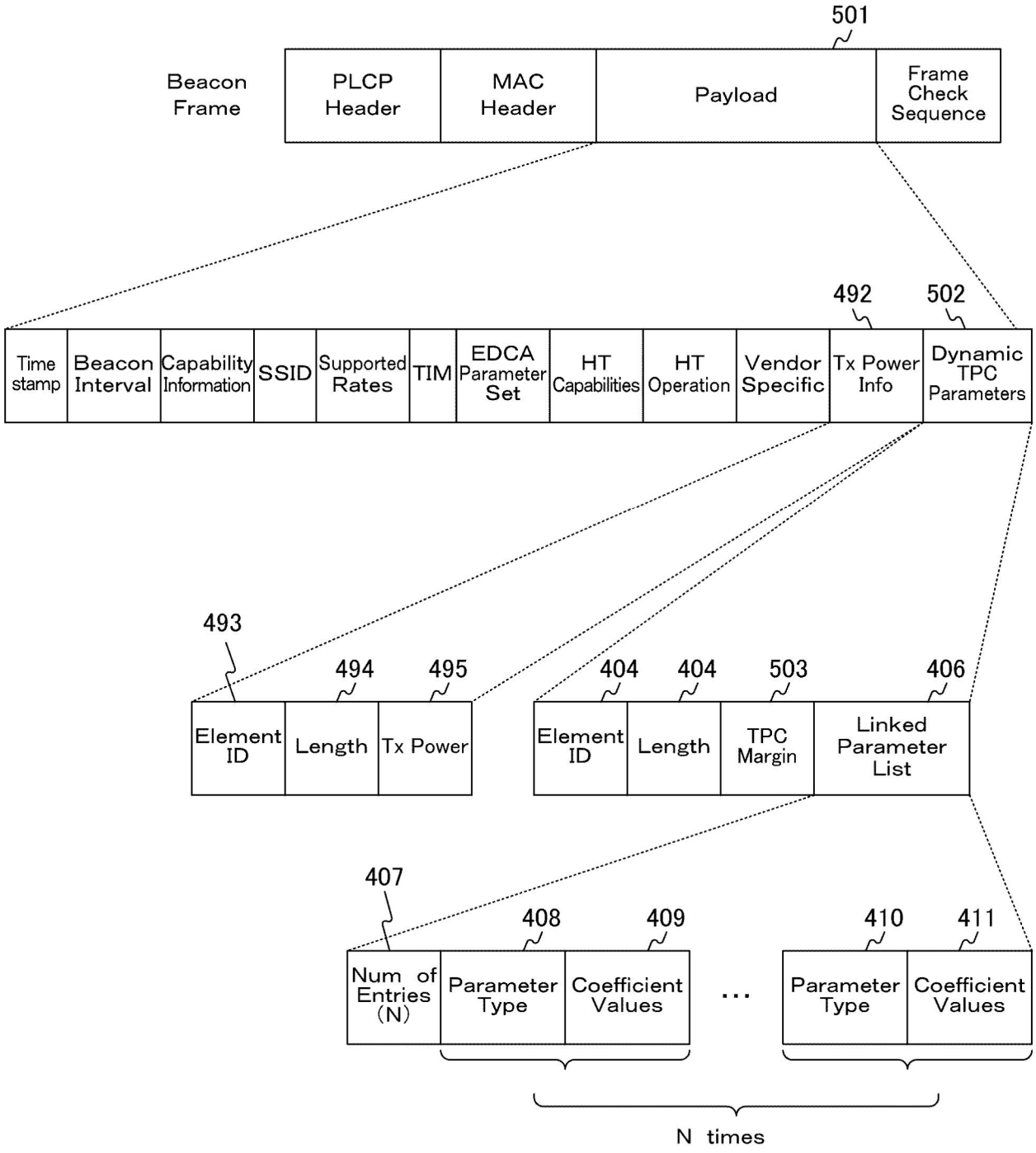


FIG. 26

EXAMPLE OF TRANSMISSION POWER DETERMINATION PROCESS

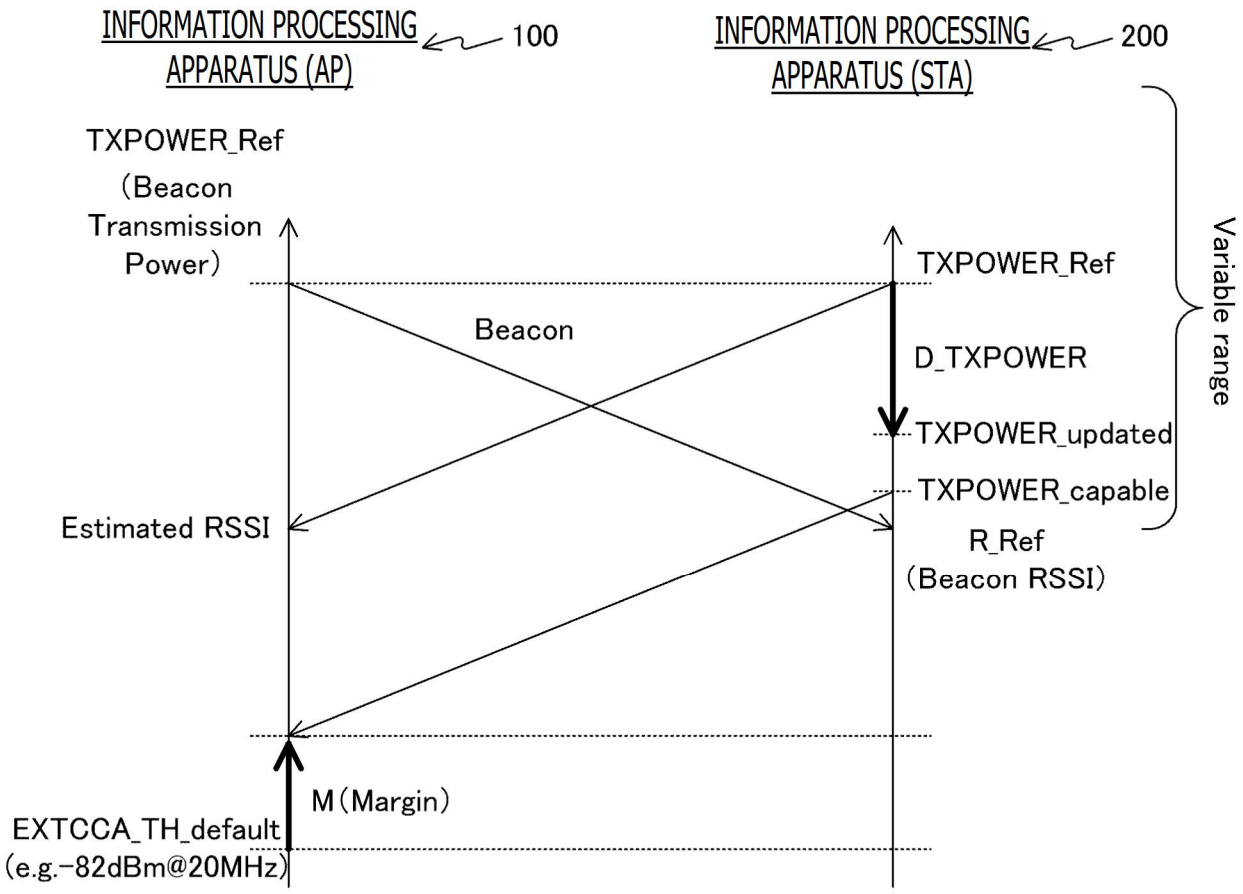


FIG. 27

EXAMPLE OF FORMAT OF BEACON

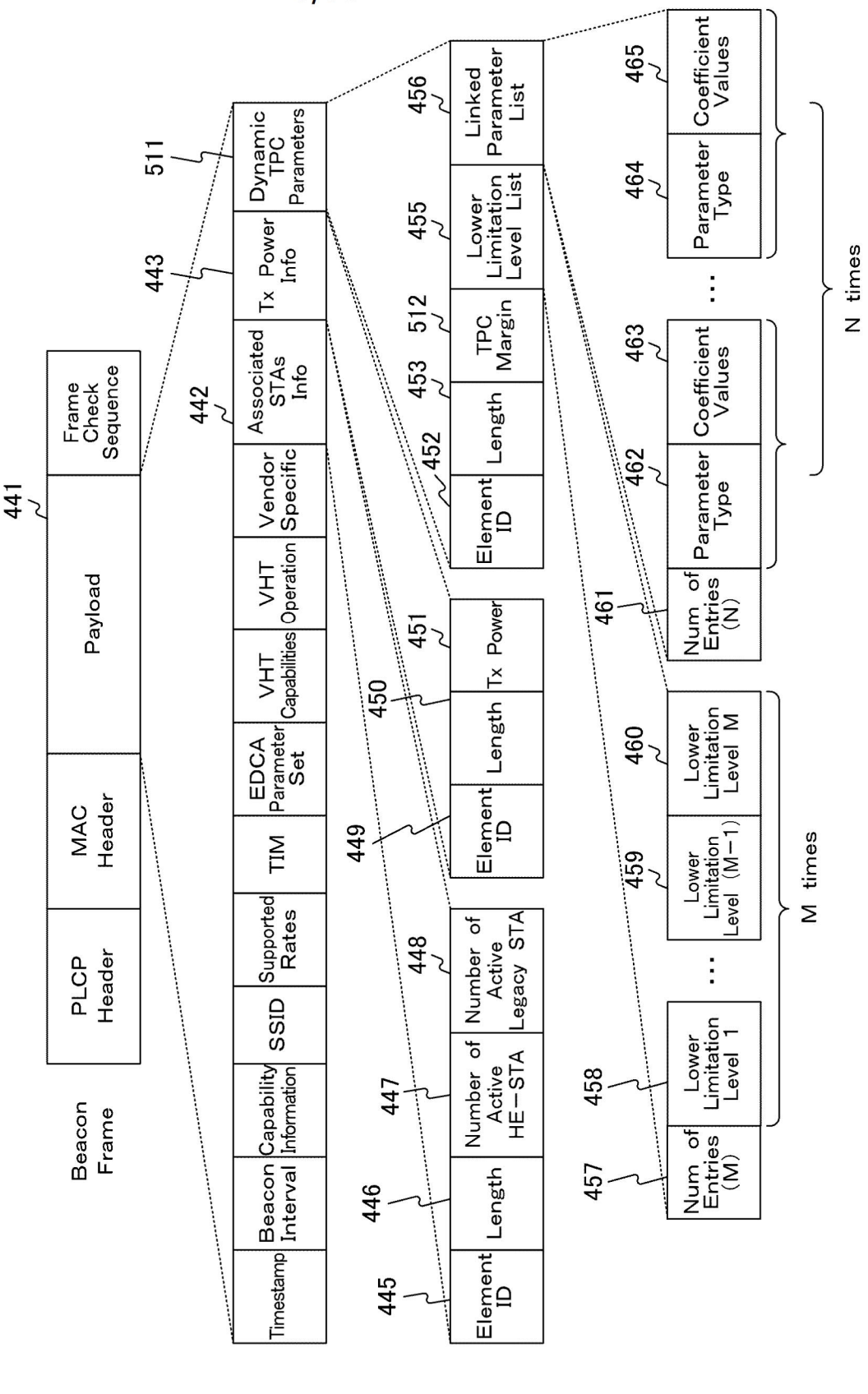
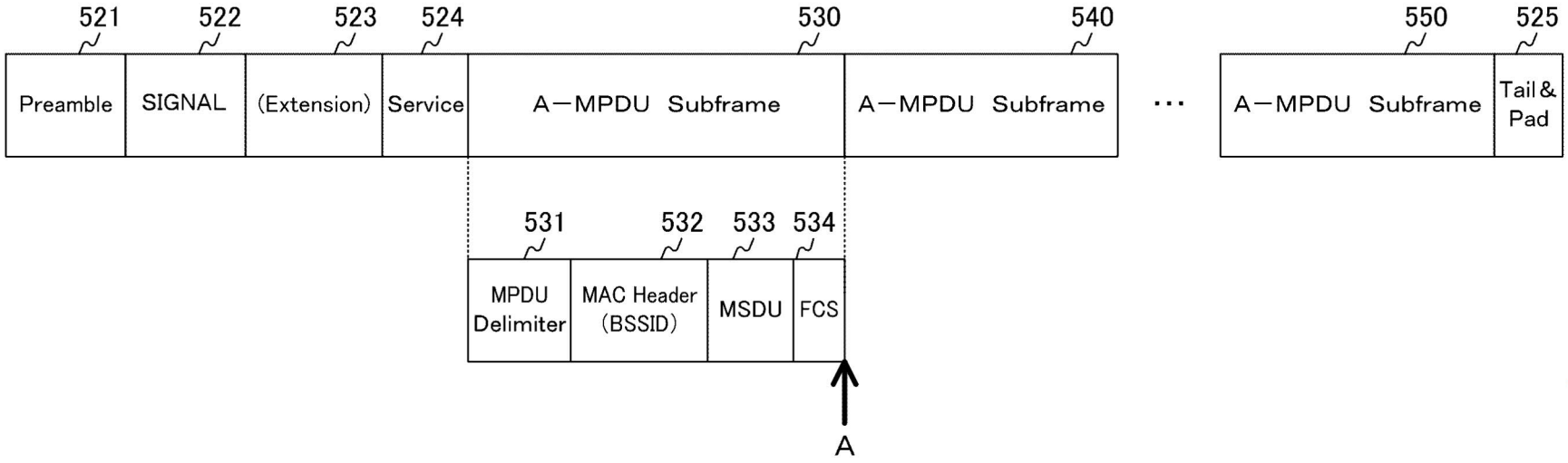
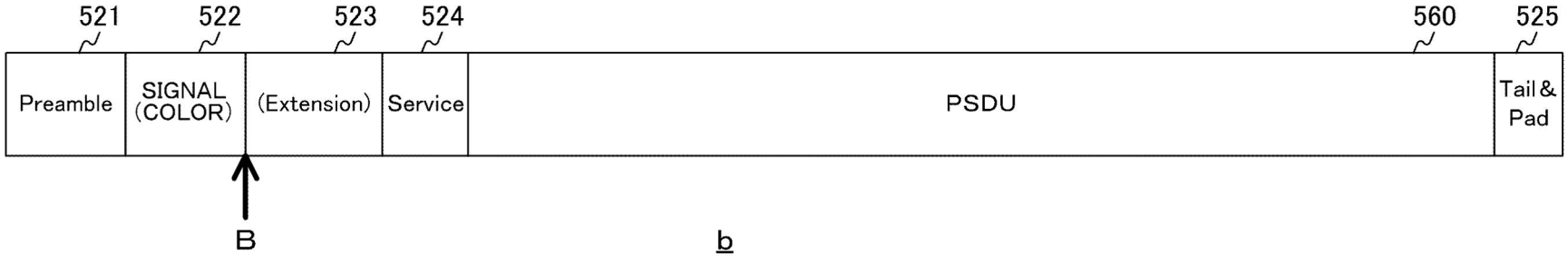


FIG. 28 EXAMPLE OF FORMAT OF FRAME USED IN EXTENDED CCA PROCESS THAT UTILIZES MAC HEADER



a

EXAMPLE OF FORMAT OF FRAME USED IN EXTENDED CCA PROCESS THAT UTILIZES PLCP HEADER



b

FIG. 29

FIRST PROCESS CLASSIFICATION TABLE (FOR DECISION BY PLCP HEADER)

	CRC CALCULATION RESULT OF PLCP HEADER IS ERROR-FREE			CRC CALCULATION RESULT OF PLCP HEADER IS ERROR
	COLOR IN PLCP HEADER IS SAME AS BELONGING BSS	COLOR IN PLCP HEADER IS DIFFERENT FROM BELONGING BSS	COLOR INFORMATION DOES NOT EXIST	
CORRELATOR OUTPUT STRENGTH IS LOWER THAN EXTENDED CCA THRESHOLD VALUE	RECEPTION	ABORTION OF RECEPTION (IDLE)	RECEPTION	ABORTION OF RECEPTION (ERROR) ※IFS=EIFS
CORRELATOR OUTPUT STRENGTH IS EQUAL TO OR HIGHER THAN EXTENDED CCA THRESHOLD VALUE	RECEPTION	ABORTION OF RECEPTION (BUSY)	RECEPTION	

a

SECOND PROCESS CLASSIFICATION TABLE (FOR DECISION BY MAC HEADER)

	CRC CALCULATION RESULT FOR MAC FCS IS ERROR-FREE		CRC CALCULATION RESULT FOR MAC FCS IS IN ERROR
	BSSID IN MAC HEADER IS SAME AS BELONGING BSS	BSSID IN MAC HEADER IS DIFFERENT FROM BELONGING BSS	
CORRELATOR OUTPUT STRENGTH IS LOWER THAN EXTENDED CCA THRESHOLD VALUE	CONTINUATION OF RECEPTION	ABORTION OF RECEPTION (IDLE)	CONTINUATION OF RECEPTION
CORRELATOR OUTPUT STRENGTH IS EQUAL TO OR HIGHER THAN EXTENDED CCA THRESHOLD VALUE	CONTINUATION OF RECEPTION	ABORTION OF RECEPTION (BUSY)	

b

FIG.30

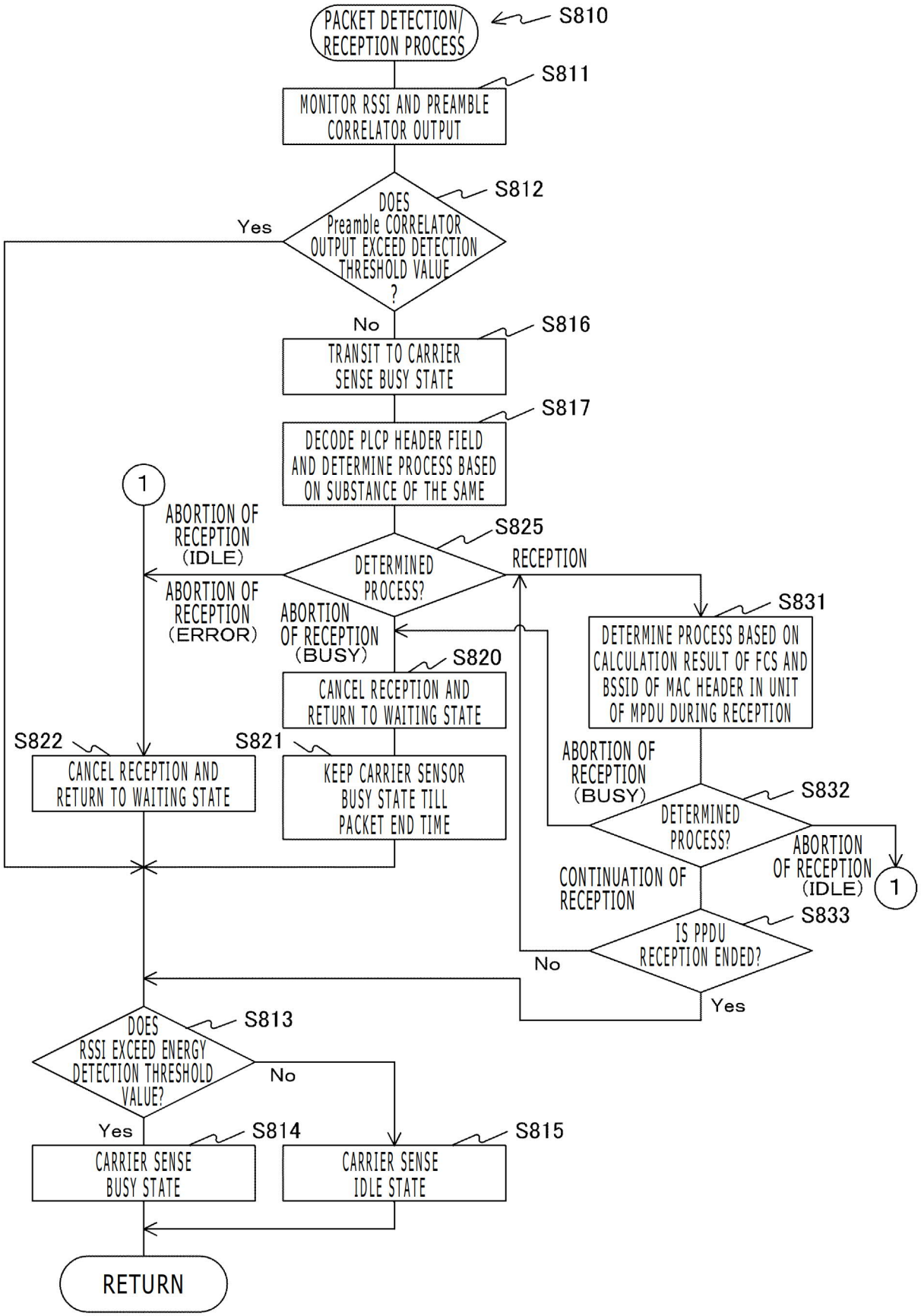

PACKET DETECTION/ RECEPTION PROCESS
S810
MONITOR RSSI AND PREAMBLE CORRELATOR OUTPUT
S811
DOES Preamble CORRELATOR OUTPUT EXCEED DETECTION THRESHOLD VALUE ?
S812
Yes
No
TRANSIT TO CARRIER SENSE BUSY STATE
S816
DECODE PLCP HEADER FIELD AND DETERMINE PROCESS BASED ON SUBSTANCE OF THE SAME
S817
1
ABORTION OF RECEPTION (IDLE)
DETERMINED PROCESS?
S825
RECEPTION
ABORTION OF RECEPTION (ERROR)
ABORTION OF RECEPTION (BUSY)
S831
DETERMINE PROCESS BASED ON CALCULATION RESULT OF FCS AND BSSID OF MAC HEADER IN UNIT OF MPDU DURING RECEPTION
S820
CANCEL RECEPTION AND RETURN TO WAITING STATE
S822
S821
CANCEL RECEPTION AND RETURN TO WAITING STATE
KEEP CARRIER SENSOR BUSY STATE TILL PACKET END TIME
ABORTION OF RECEPTION (BUSY)
S832
DETERMINED PROCESS?
ABORTION OF RECEPTION (IDLE)
1
CONTINUATION OF RECEPTION
S833
IS PPDU RECEPTION ENDED?
No
Yes
DOES RSSI EXCEED ENERGY DETECTION THRESHOLD VALUE?
S813
No
Yes
S814
S815
CARRIER SENSE BUSY STATE
CARRIER SENSE IDLE STATE
RETURN

FIG. 31

EXAMPLE OF VIRTUAL SUBTRACTION PROCESS OF BACKOFF COUNTER

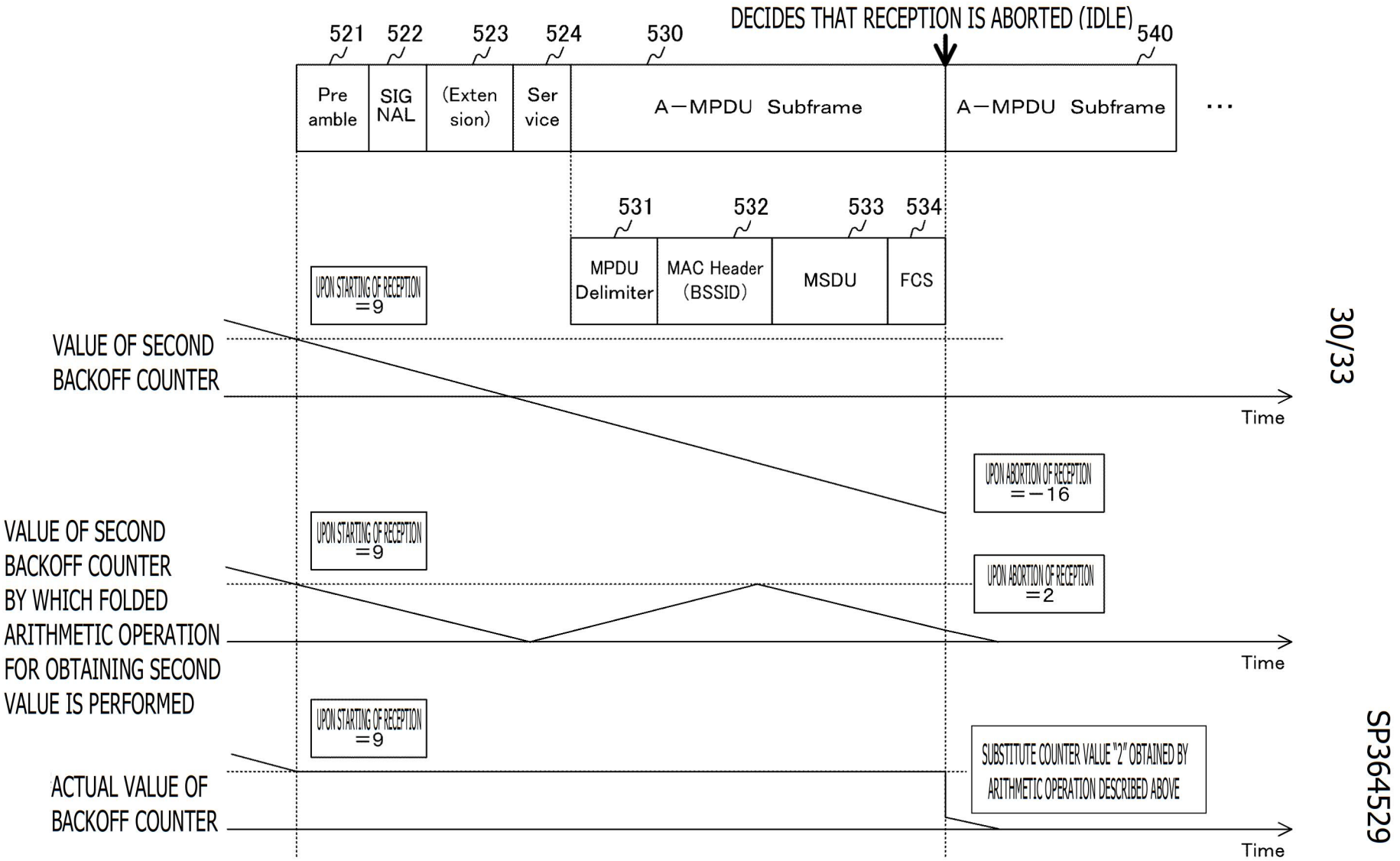


FIG. 32

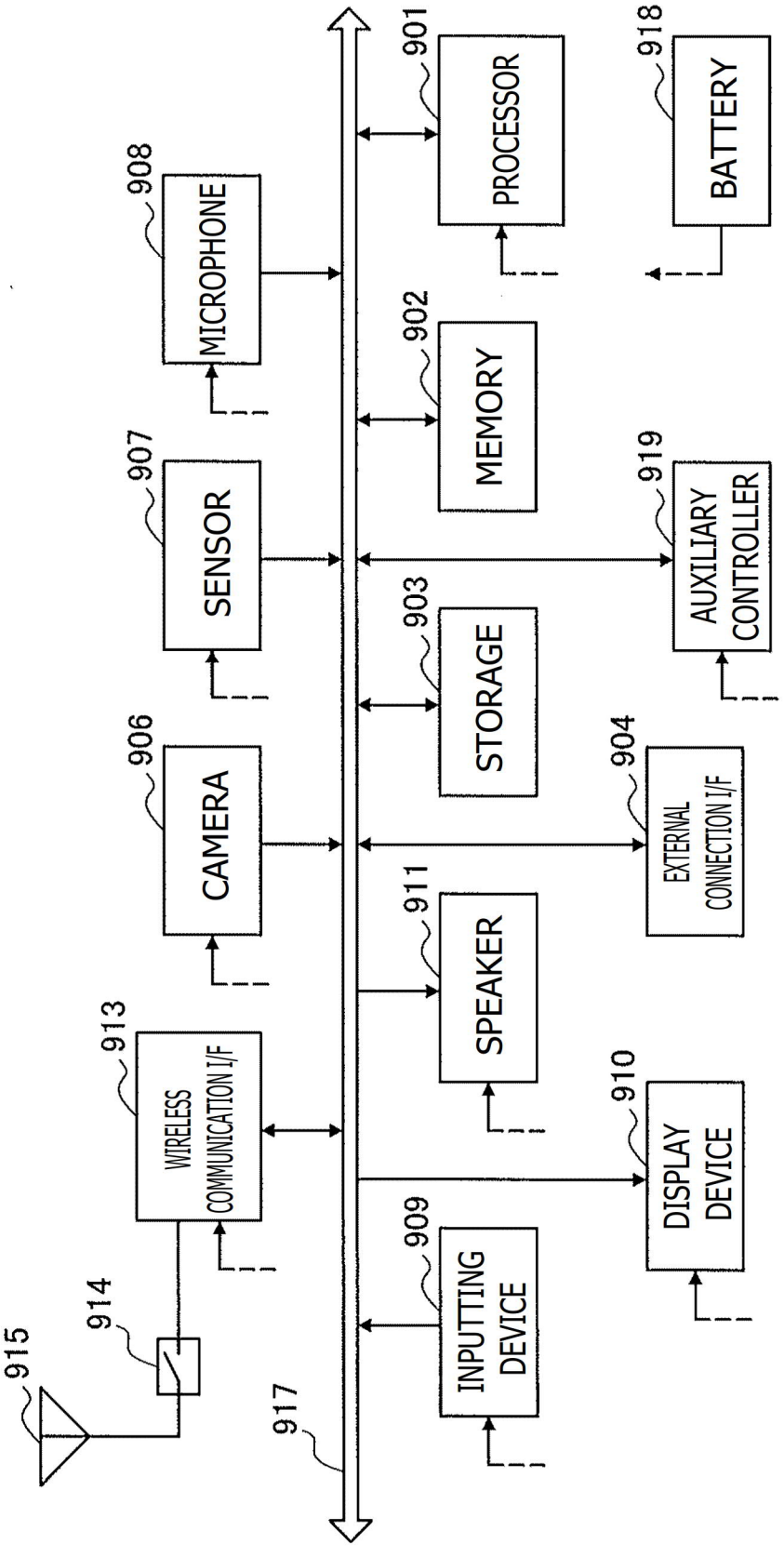

900
901
PROCESSOR
902
MEMORY
903
STORAGE
904
EXTERNAL CONNECTION I/F
906
CAMERA
907
SENSOR
908
MICROPHONE
909
INPUTTING DEVICE
910
DISPLAY DEVICE
911
SPEAKER
913
WIRELESS COMMUNICATION I/F
914
915
917
918
BATTERY
919
AUXILIARY CONTROLLER

FIG. 33

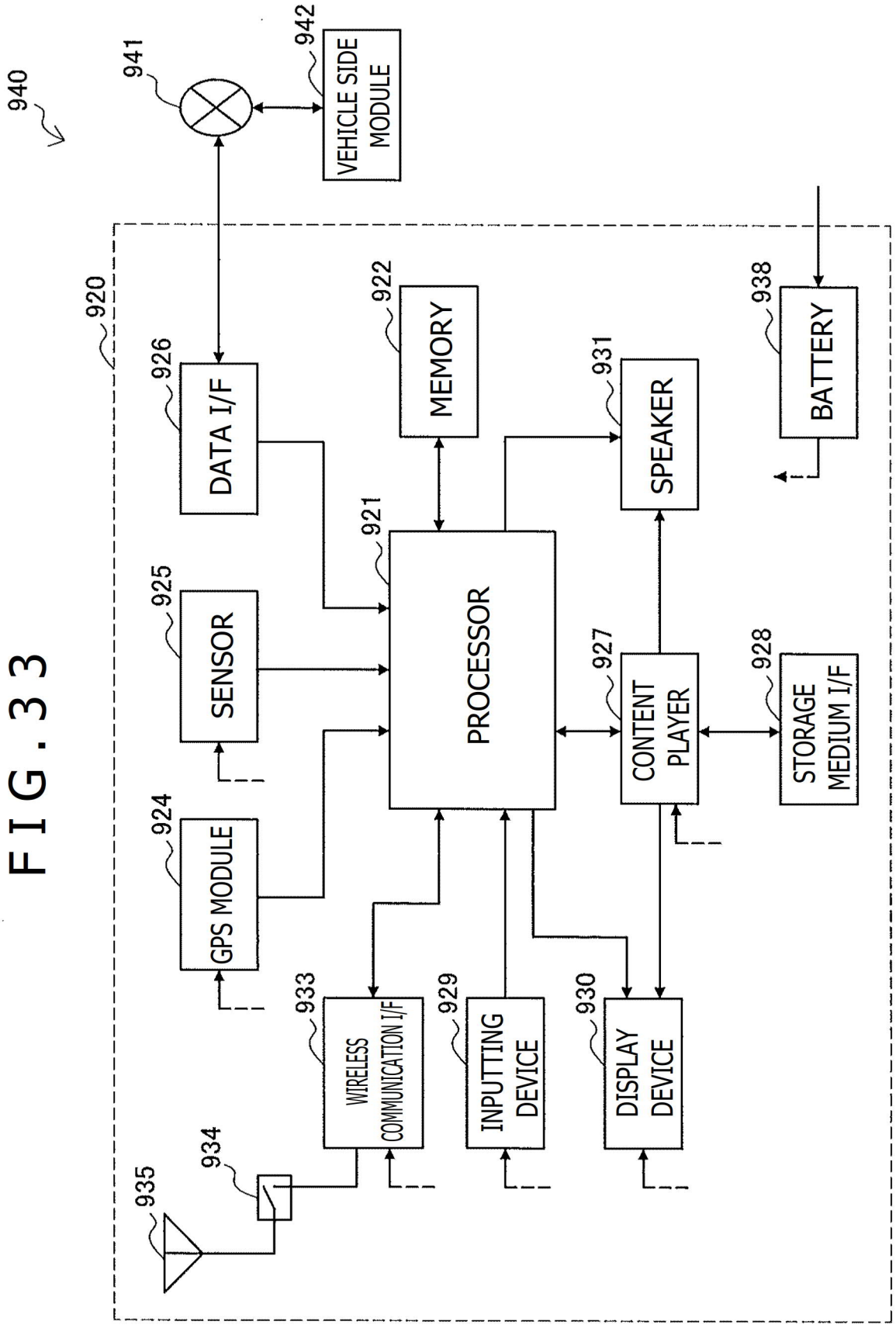
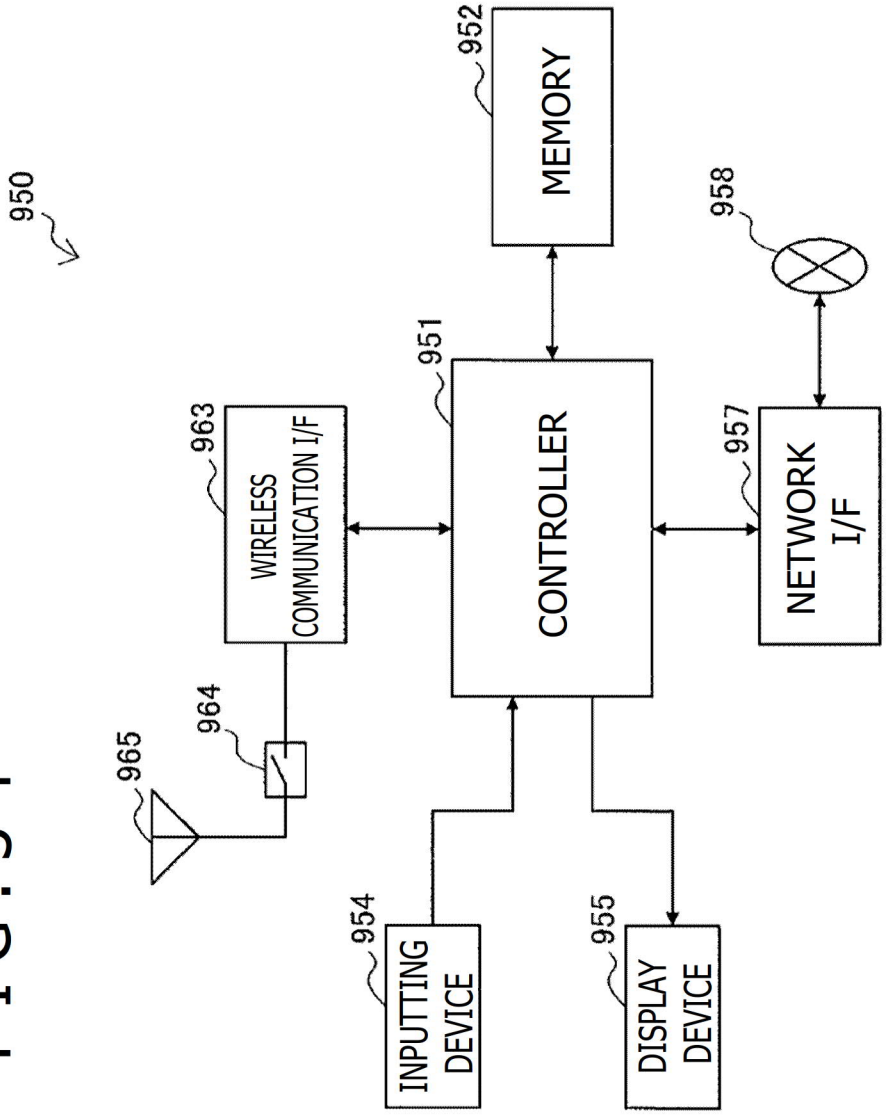

940
941
942
VEHICLE SIDE MODULE
920
926
DATA I/F
922
MEMORY
938
BATTERY
931
SPEAKER
921
PROCESSOR
925
SENSOR
927
CONTENT PLAYER
928
STORAGE MEDIUM I/F
924
GPS MODULE
933
WIRELESS COMMUNICATION I/F
929
INPUTTING DEVICE
930
DISPLAY DEVICE
934
935

FIG. 34


950
952
MEMORY
958
951
CONTROLLER
963
WIRELESS COMMUNICATION I/F
957
NETWORK I/F
964
965
954
INPUTTING DEVICE
955
DISPLAY DEVICE