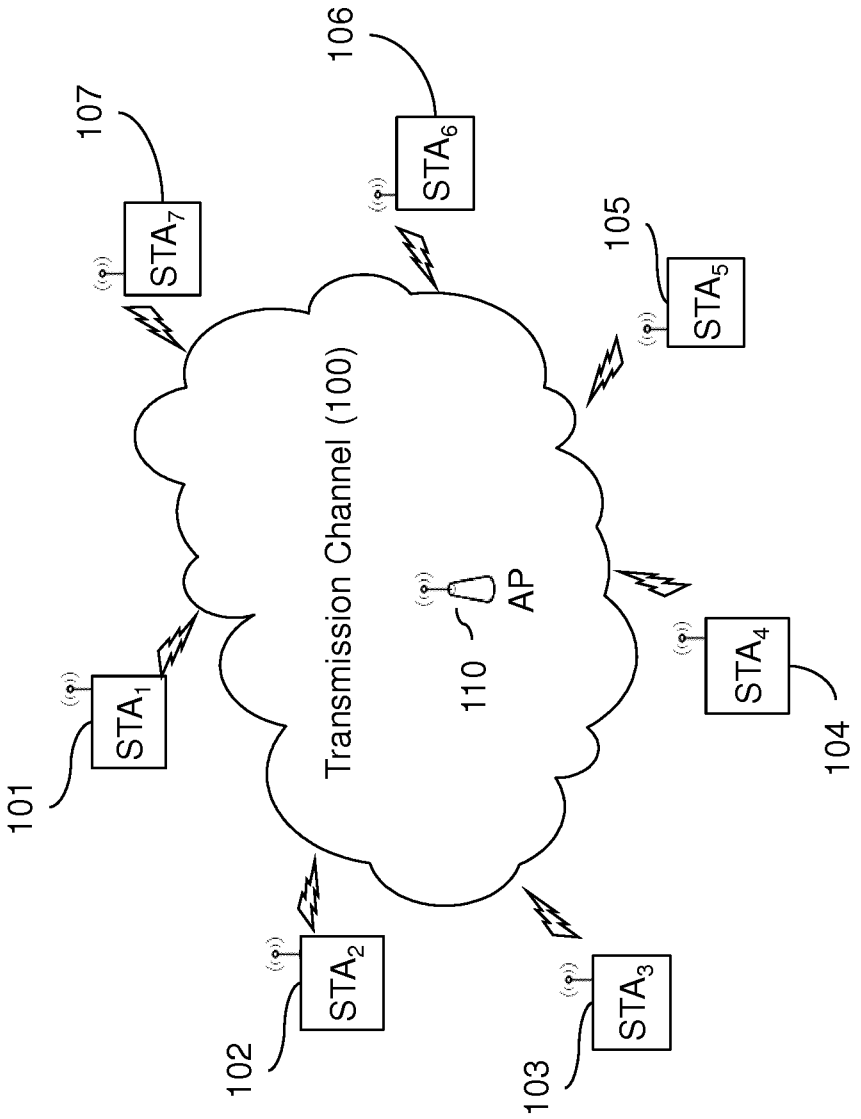

Transmission Channel (100)
AP
110
STA1
101
STA2
102
STA3
103
STA4
104
STA5
105
STA6
106
STA7
107

Fig. 1

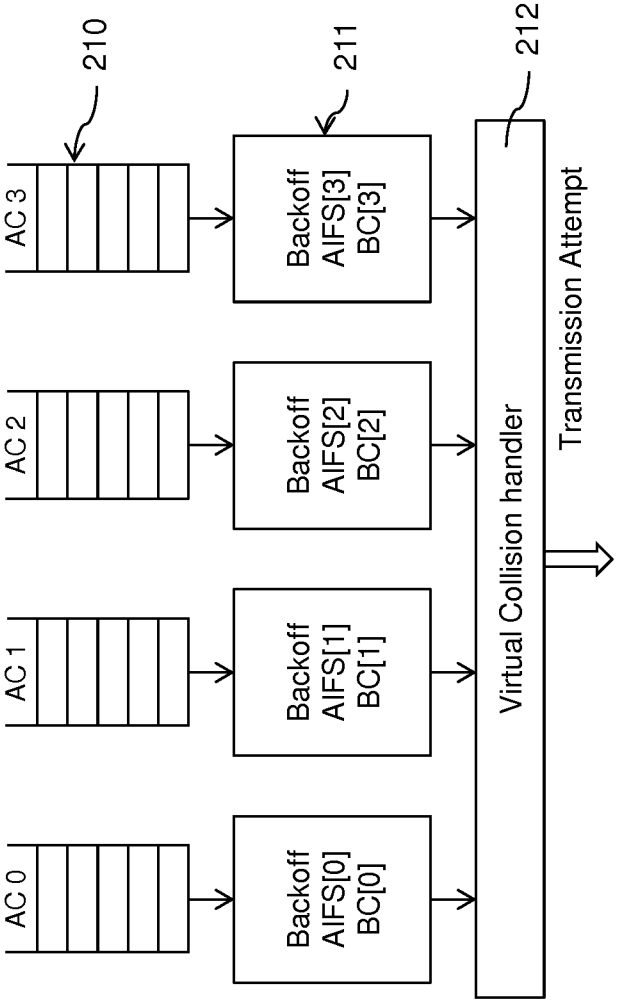


Fig. 2a

Priority To Access Category Mappings

Priority	Access Category (AC)	Designation (Informative)
1	0	Best Effort
2	0	Best Effort
0	0	Best Effort
3	1	Video Probe
4	2	Video
5	2	Video
6	3	Voice
7	3	Voice

Fig. 2b

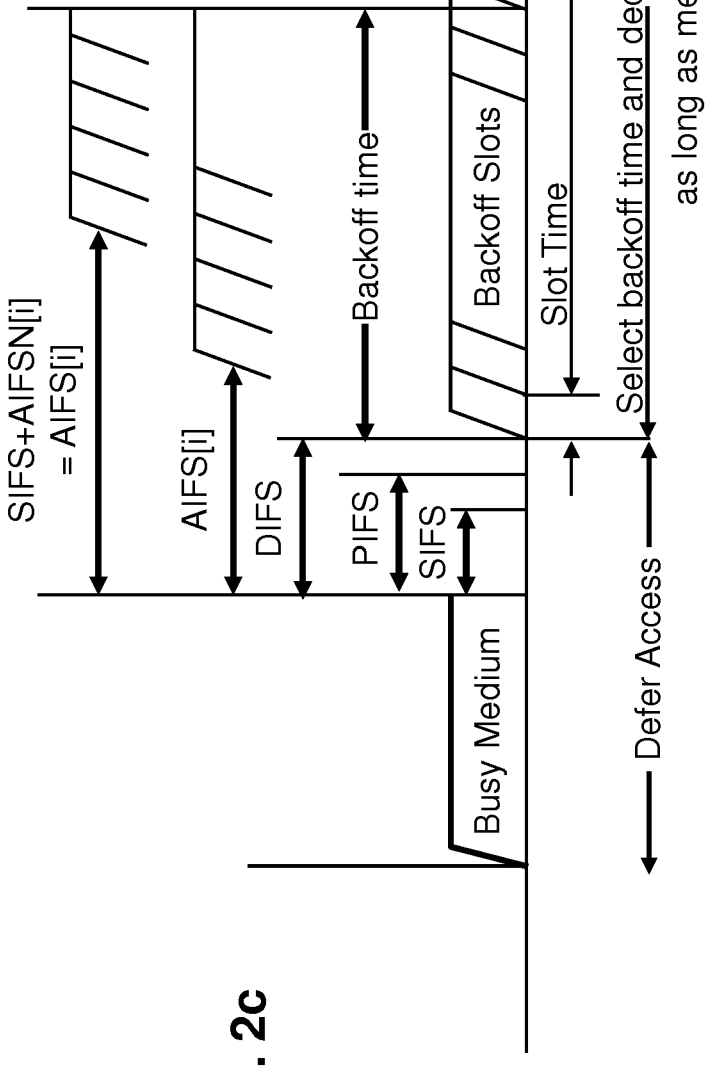

SIFS+AIFSN[i]
= AIFS[i]
AIFS[i]
DIFS
PIFS
SIFS
Backoff time
Backoff Slots
Slot Time
Next Frame
Busy Medium
Select backoff time and decrement
as long as medium is idle
Defer Access

Fig. 2c

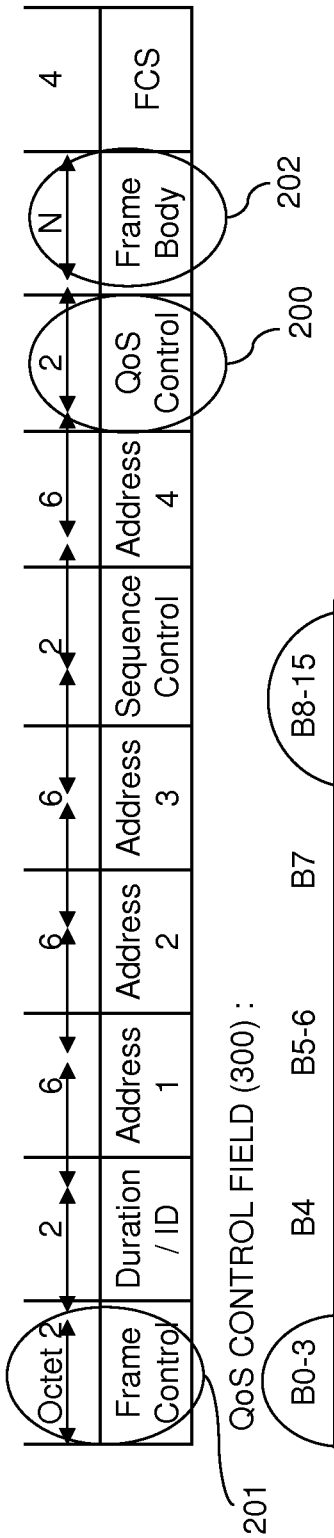

Octet 2
6
6
6
2
6
2
N
4
Frame Control
Duration / ID
Address 1
Address 2
Address 3
Sequence Control
Address 4
QoS Control
Frame Body
FCS
200
202
QoS CONTROL FIELD (300) :
B0-3
B4
B5-6
B7
B8-15
TID
1
ACK Policy
Reserved
Queue Size
203
0 ~ 7 : UP (User Priority)
0 ~ 15 : TSID (Traffic Stream ID)
201
204

Fig. 2d

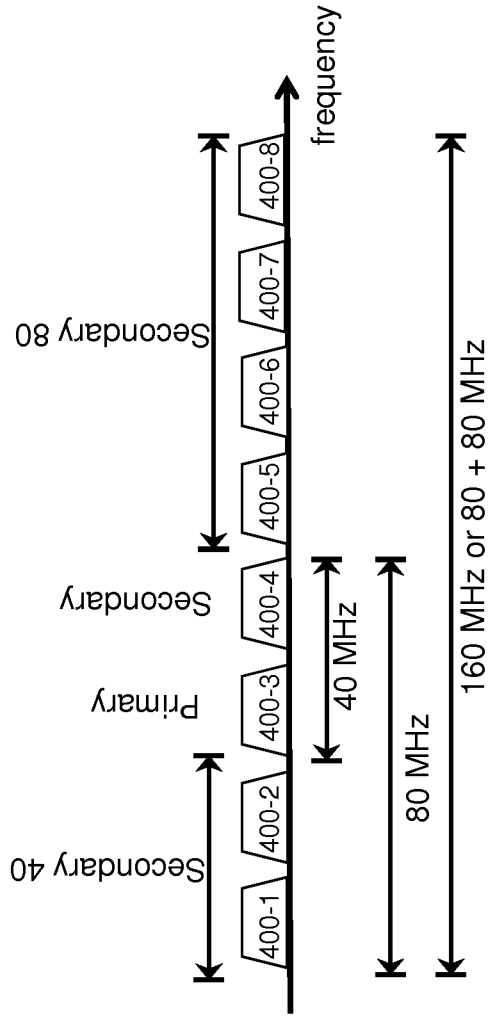

frequency
Secondary 80
Secondary
Primary
Secondary 40
400-1
400-2
400-3
400-4
400-5
400-6
400-7
400-8
40 MHz
80 MHz
160 MHz or 80 + 80 MHz

Fig. 3

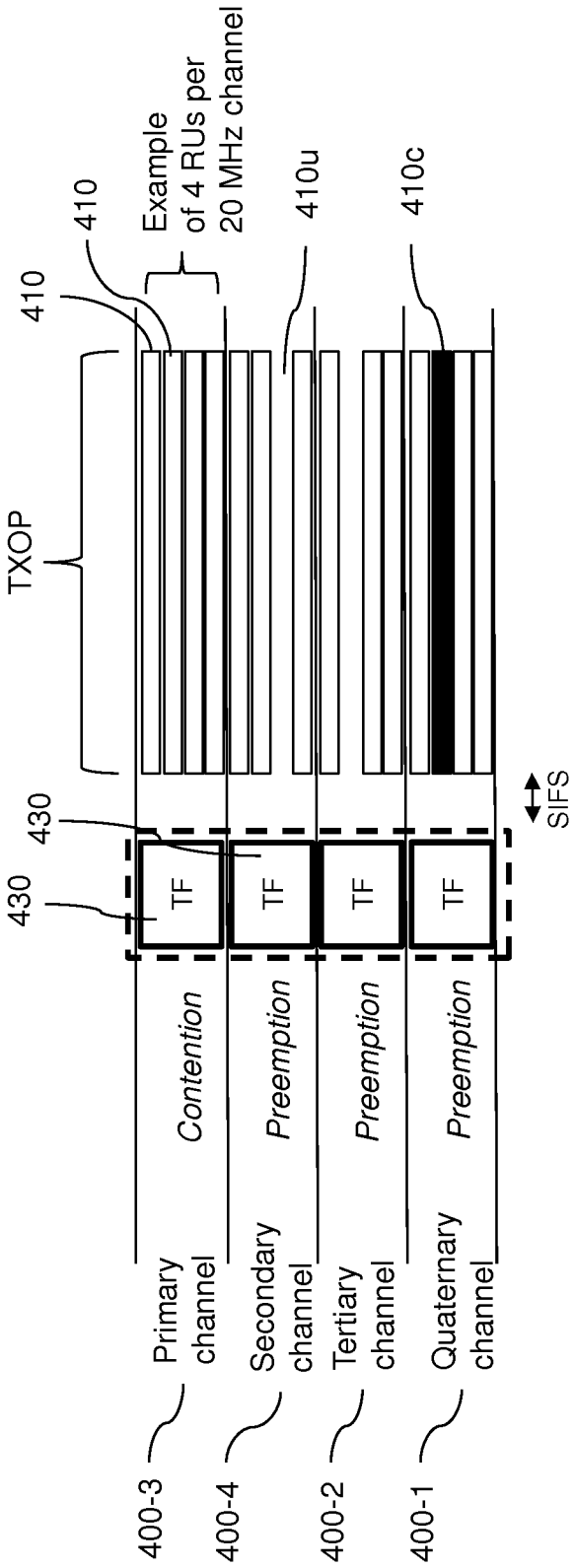

410
Example
of 4 RUs per
20 MHz channel
410
410u
410c
TXOP
430
430
TF
TF
TF
TF
SIFS
Primary
channel
Secondary
channel
Tertiary
channel
Quaternary
channel
Contention
Preemption
Preemption
Preemption
400-3
400-4
400-2
400-1

Fig. 4

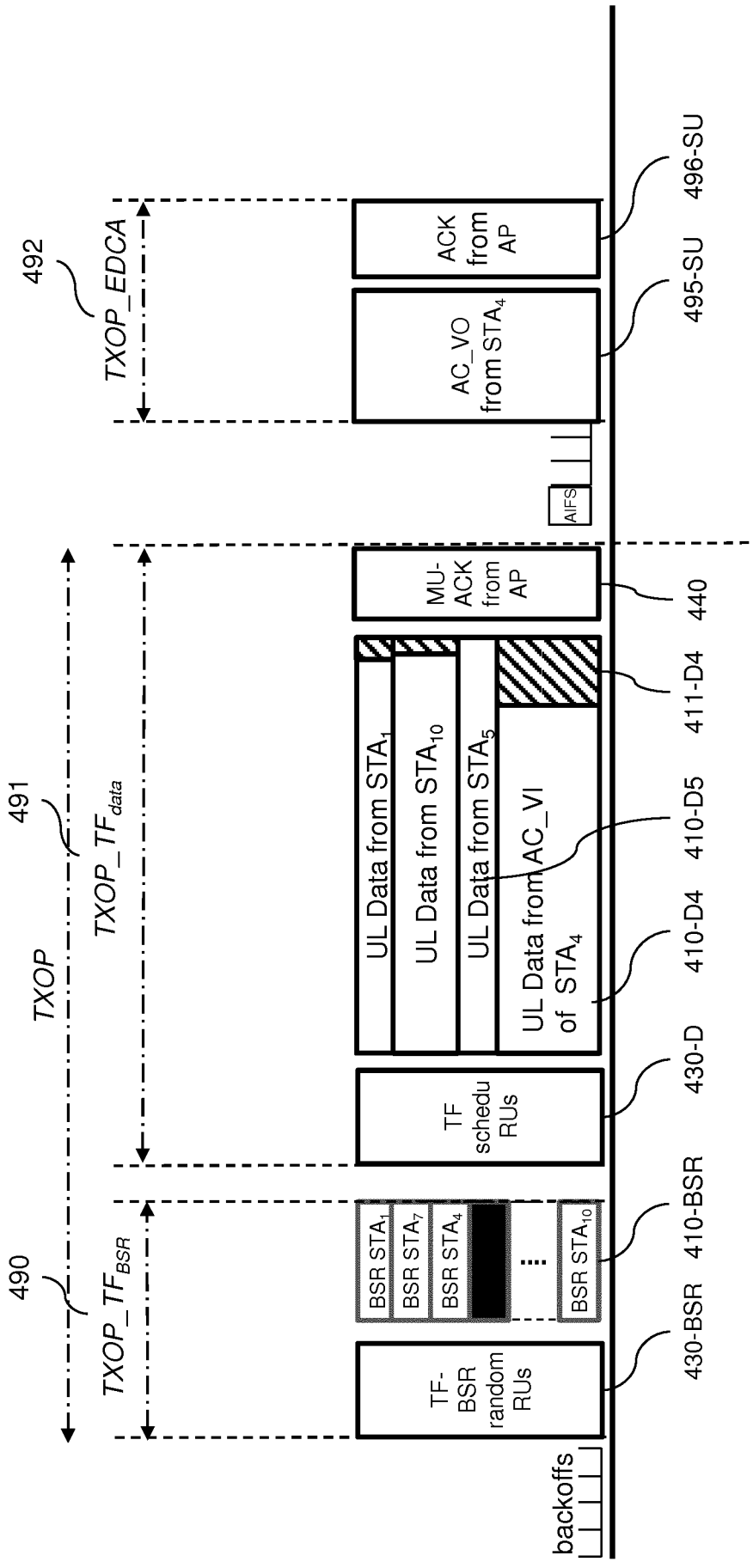

TXOP_EDCA
492
ACK from AP
496-SU
AC_VO from STA4
495-SU
AIFS
MU-ACK from AP
440
UL Data from STA1
UL Data from STA10
UL Data from STA5
UL Data from AC_VI of STA4
411-D4
410-D5
410-D4
TXOP
491
TXOP_TFdata
TF schedu RUs
430-D
BSR STA1
BSR STA7
BSR STA4
BSR STA10
410-BSR
490
TXOP_TFBSR
TF-BSR random RUs
430-BSR
backoffs

Fig. 5a

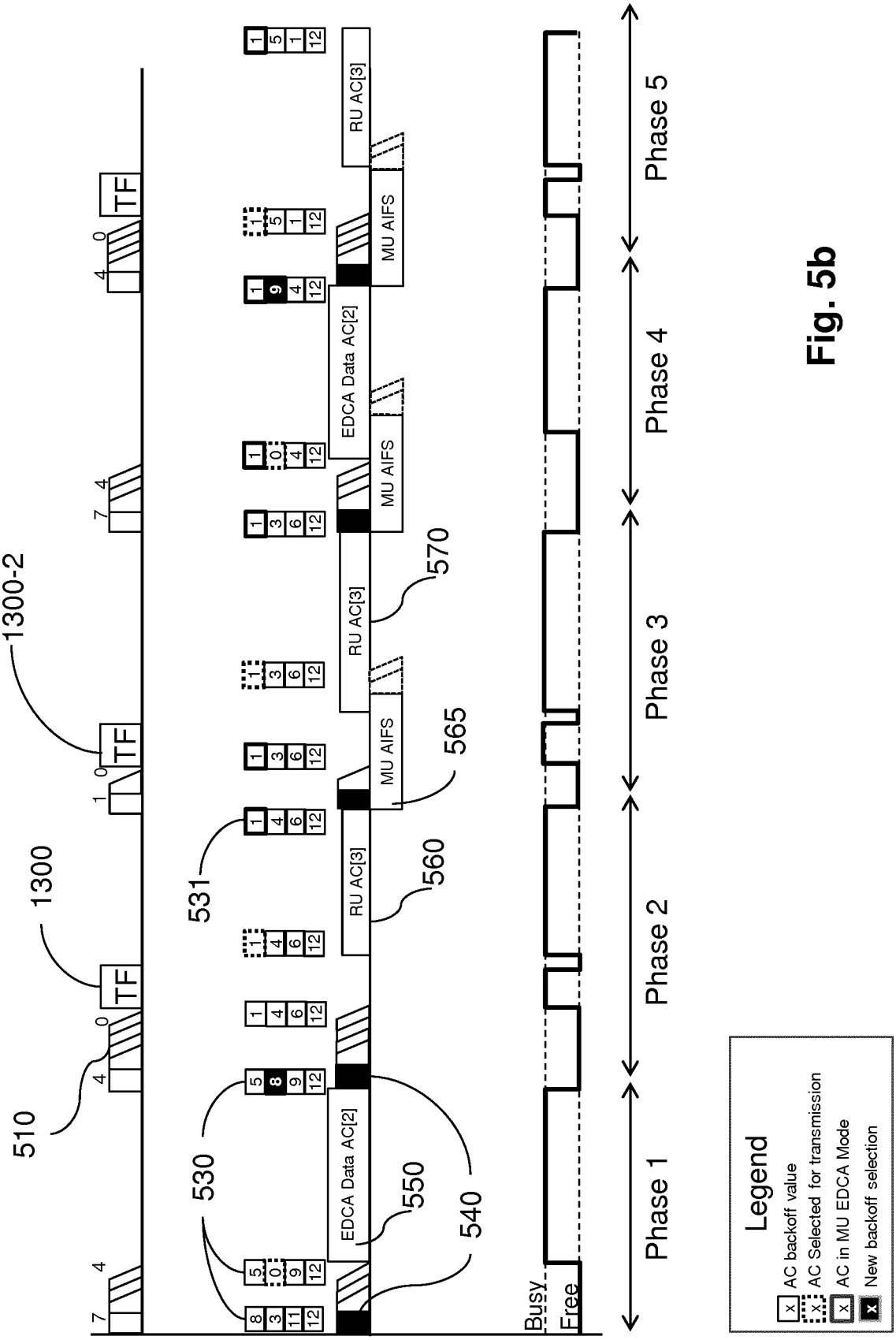

501
AP
STA
502
VO
VI
BE
BG
TF
1300-2
1300
510
530
531
540
550
560
565
570
EDCA Data AC[2]
RU AC[3]
MU AIFS
Busy
Free
Chanel State
Phase 1
Phase 2
Phase 3
Phase 4
Phase 5
Legend
AC backoff value
AC Selected for transmission
AC in MU EDCA Mode
New backoff selection

Fig. 5b

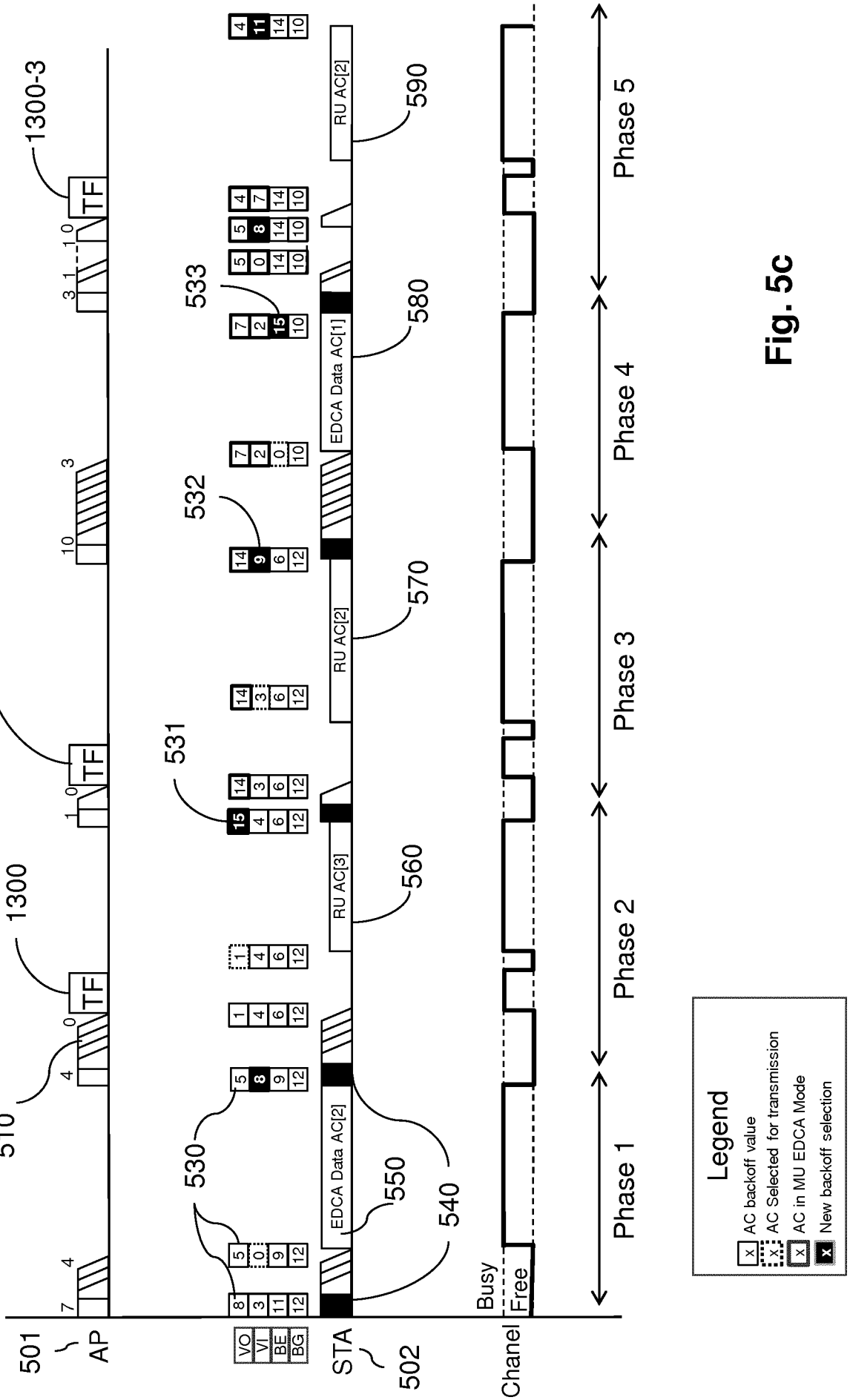

501
AP
STA
502
Chanel
Busy
Free
VO
VI
BE
BG
510
1300
1300-2
1300-3
530
531
532
533
540
550
560
570
580
590
EDCA Data AC[2]
RU AC[3]
RU AC[2]
EDCA Data AC[1]
RU AC[2]
TF
Phase 1
Phase 2
Phase 3
Phase 4
Phase 5
Legend
AC backoff value
AC Selected for transmission
AC in MU EDCA Mode
New backoff selection

Fig. 5c

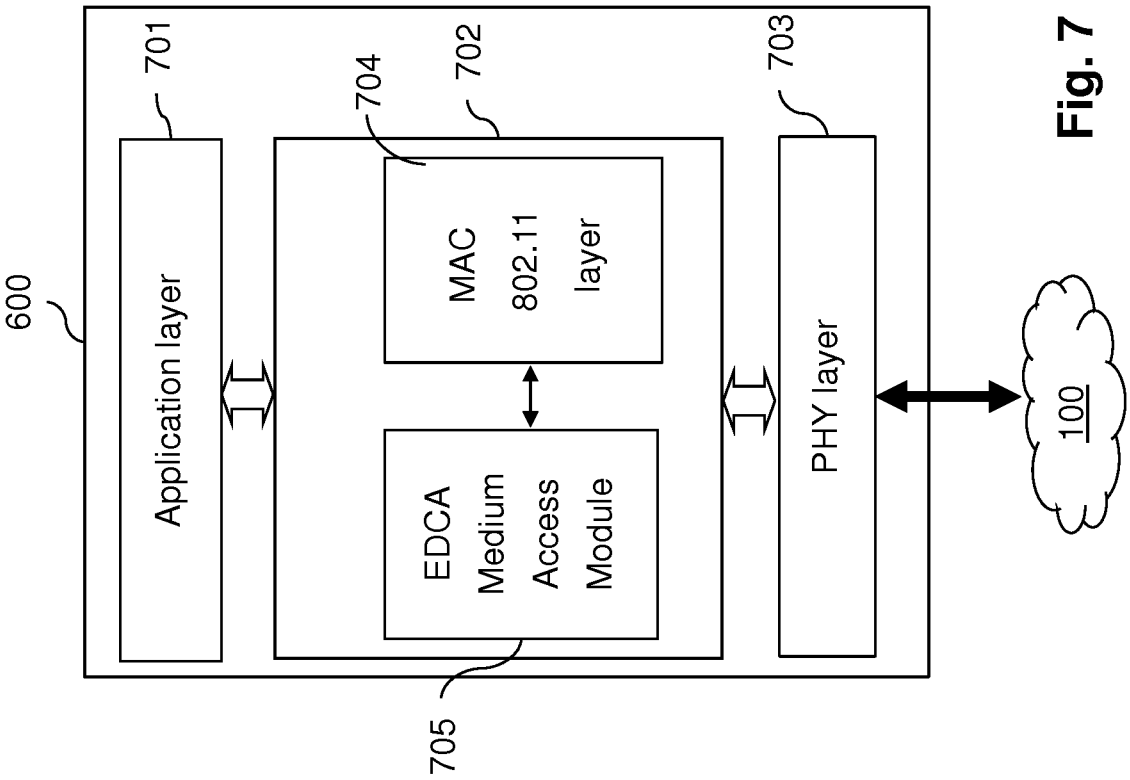

600
701
Application layer
704
MAC
802.11
layer
702
EDCA
Medium
Access
Module
705
703
PHY layer
100

Fig. 7

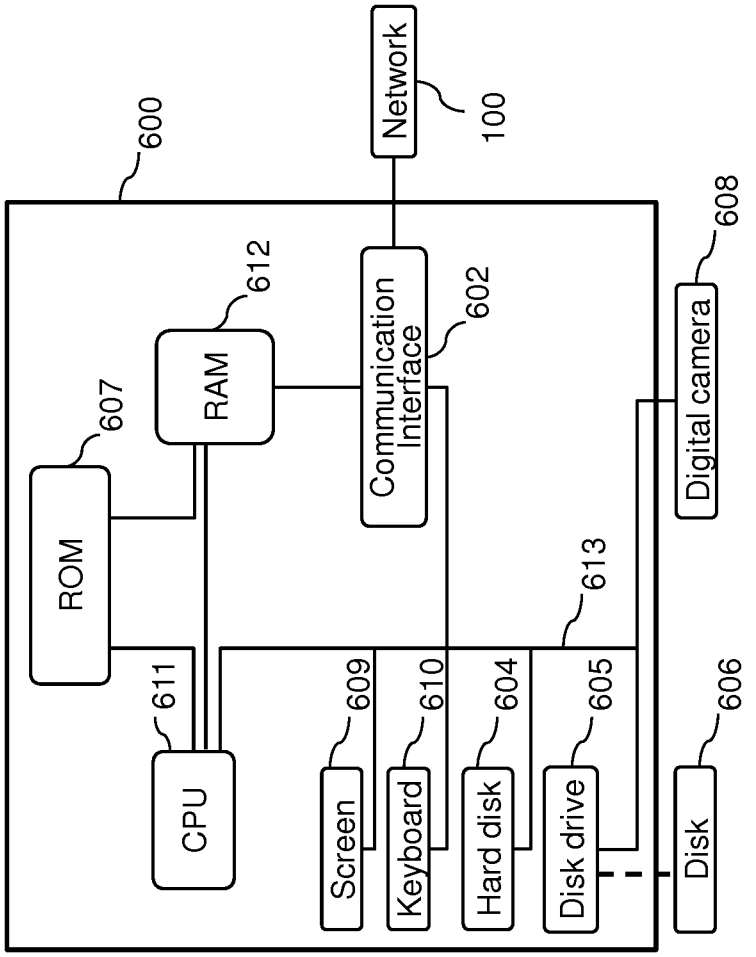

600
Network
100
608
Digital camera
612
RAM
602
Communication
Interface
607
ROM
613
611
CPU
609
Screen
610
Keyboard
604
Hard disk
605
Disk drive
606
Disk

Fig. 6

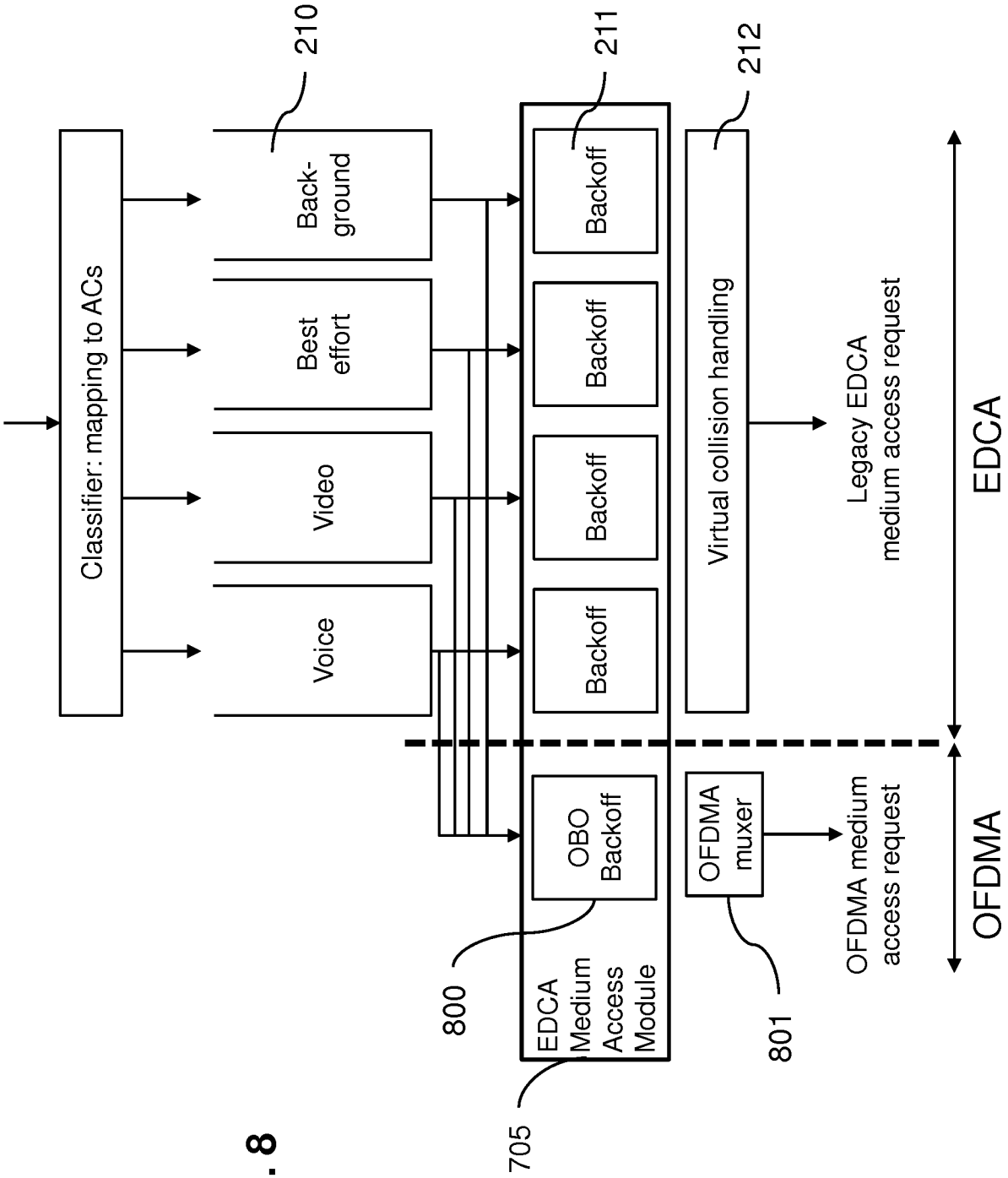

Classifier: mapping to ACs
Voice
Video
Best effort
Back-ground
210
Backoff
Backoff
Backoff
Backoff
211
OBO Backoff
EDCA Medium Access Module
705
800
Virtual collision handling
212
OFDMA muxer
801
Legacy EDCA medium access request
OFDMA medium access request
EDCA
OFDMA

Fig. 8

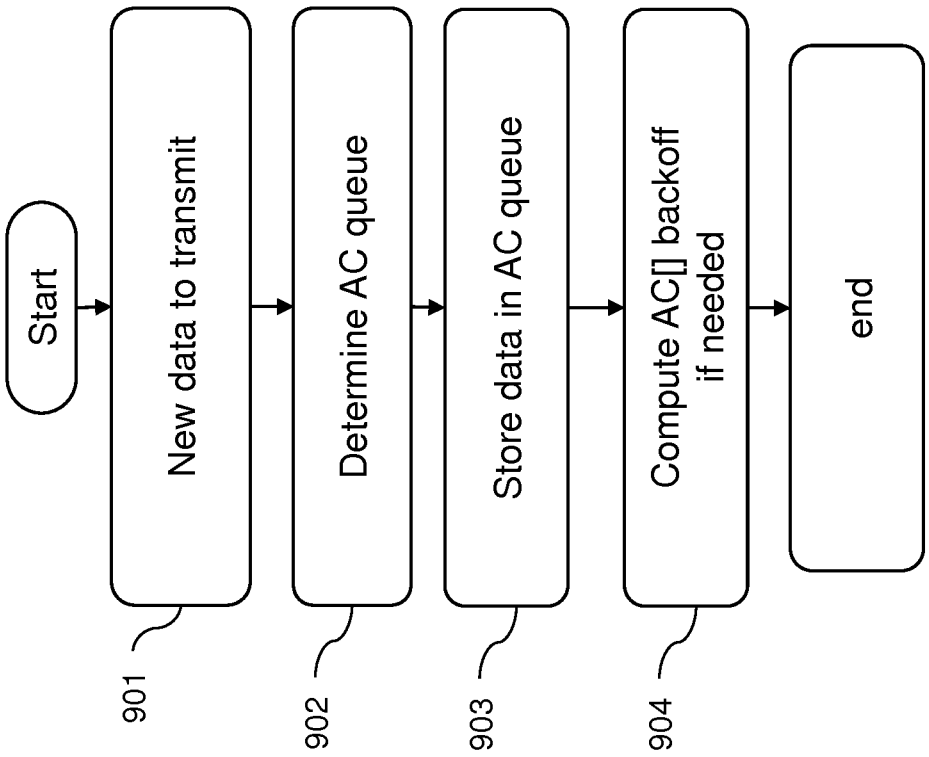

Start
New data to transmit
Determine AC queue
Store data in AC queue
Compute AC[] backoff if needed
end
901
902
903
904

Fig. 9

Fig. 10

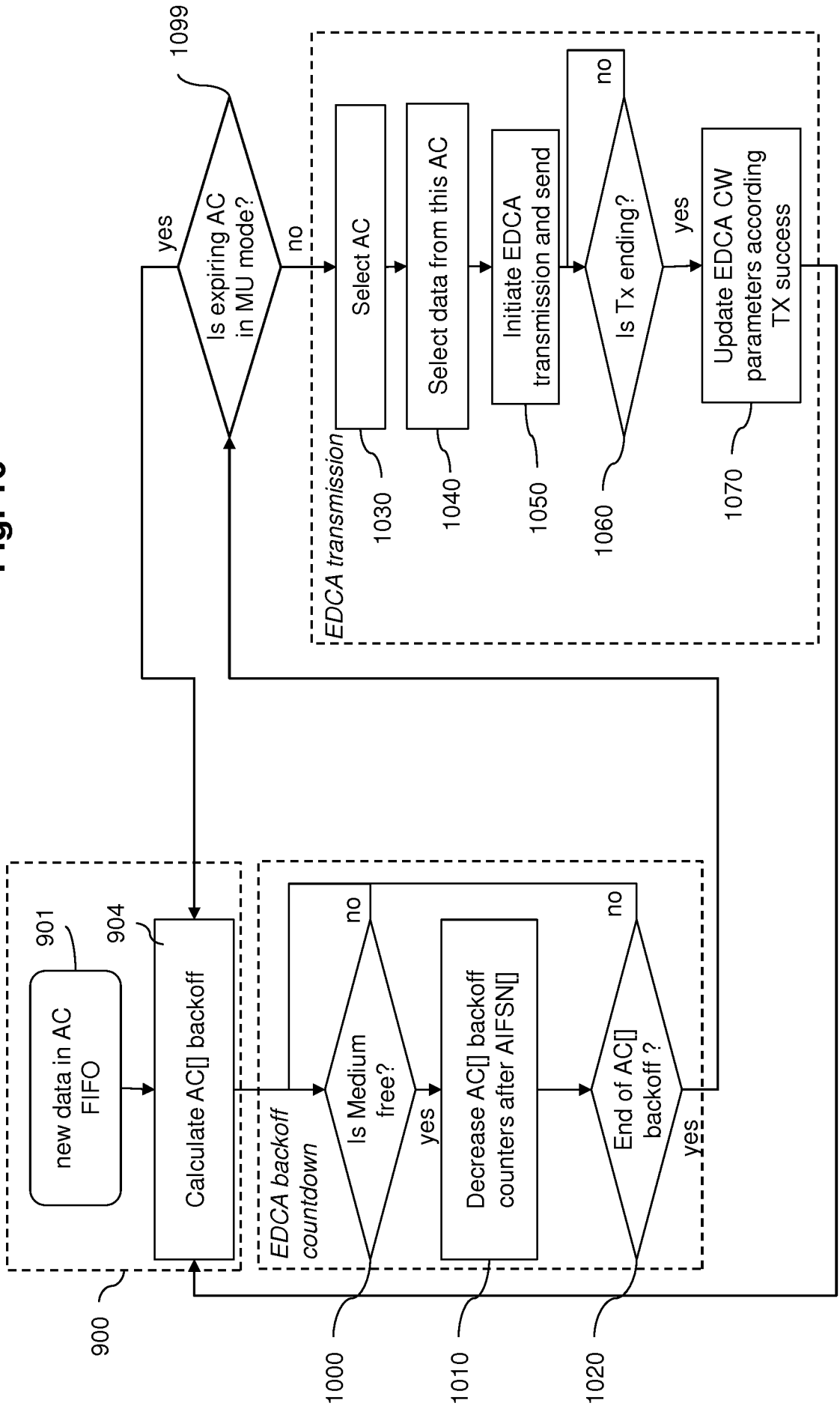

900
new data in AC FIFO
901
Calculate AC[] backoff
904
EDCA backoff countdown
Is Medium free?
no
yes
1000
Decrease AC[] backoff counters after AIFSN[]
1010
End of AC[] backoff ?
no
yes
1020
Is expiring AC in MU mode?
1099
yes
no
EDCA transmission
Select AC
1030
Select data from this AC
1040
Initiate EDCA transmission and send
1050
Is Tx ending?
1060
no
yes
Update EDCA CW parameters according TX success
1070

Fig. 11

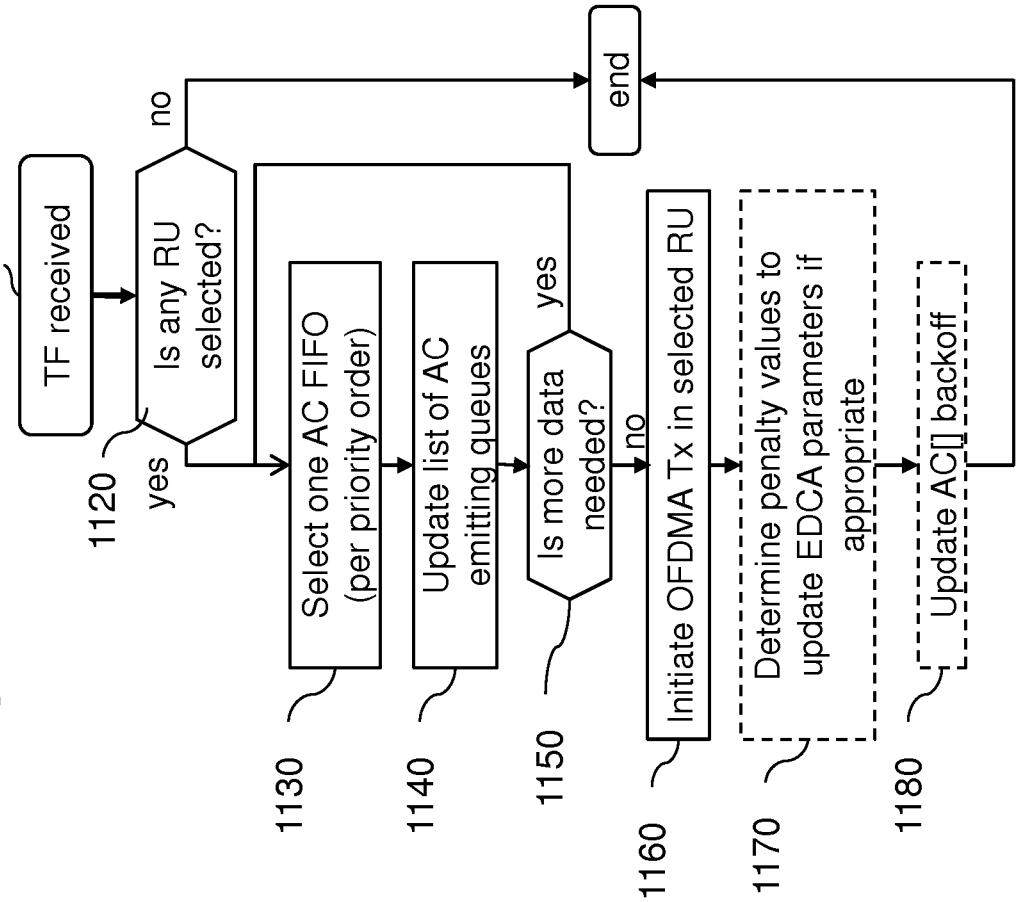
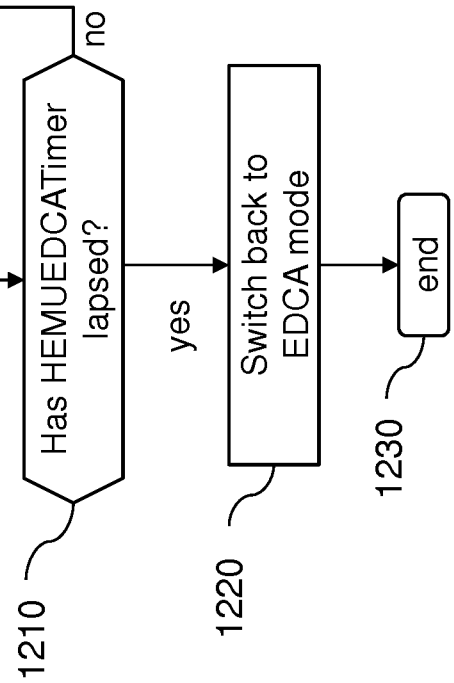

1110
TF received
Is any RU selected?
no
yes
1120
end
Select one AC FIFO (per priority order)
1130
Update list of AC emitting queues
1140
Is more data needed?
yes
no
1150
Initiate OFDMA Tx in selected RU
1160
Determine penalty values to update EDCA parameters if appropriate
1170
Update AC[] backoff
1180

Fig. 12


Has HEMUEDCATimer lapsed?
no
yes
1210
Switch back to EDCA mode
1220
end
1230

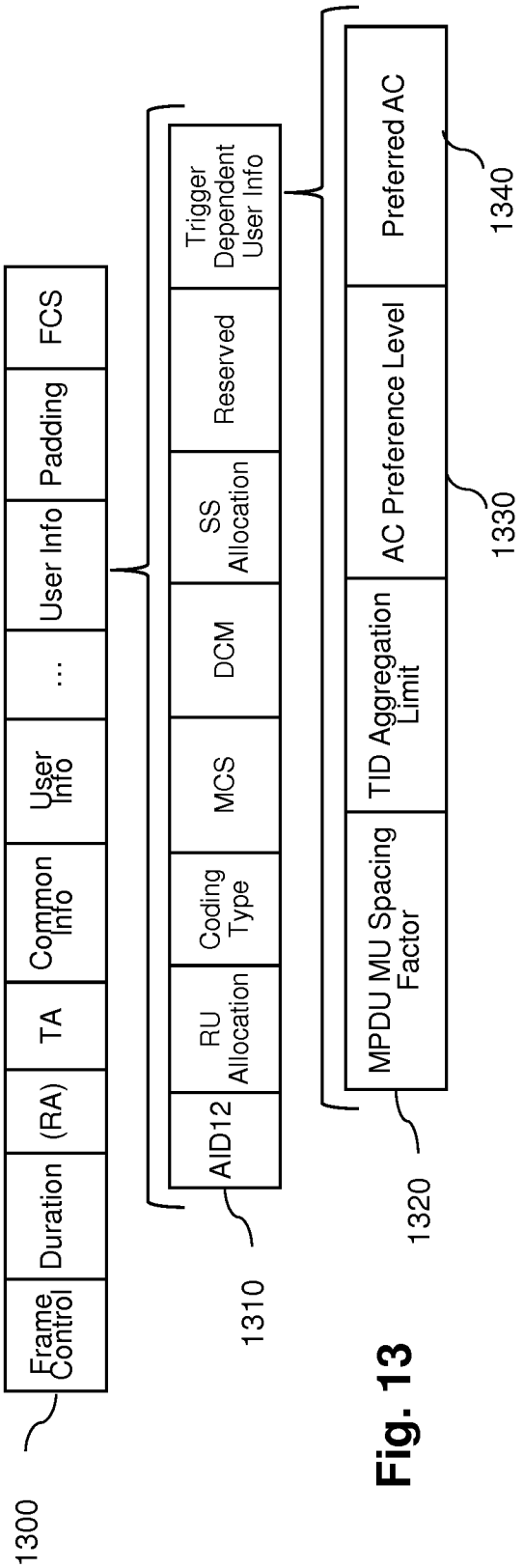

Frame Control
Duration
(RA)
TA
Common Info
User Info
...
User Info
Padding
FCS
AID12
RU Allocation
Coding Type
MCS
DCM
SS Allocation
Reserved
Trigger Dependent User Info
MPDU MU Spacing Factor
TID Aggregation Limit
AC Preference Level
Preferred AC
1300
1310
1320
1330
1340

Fig. 13

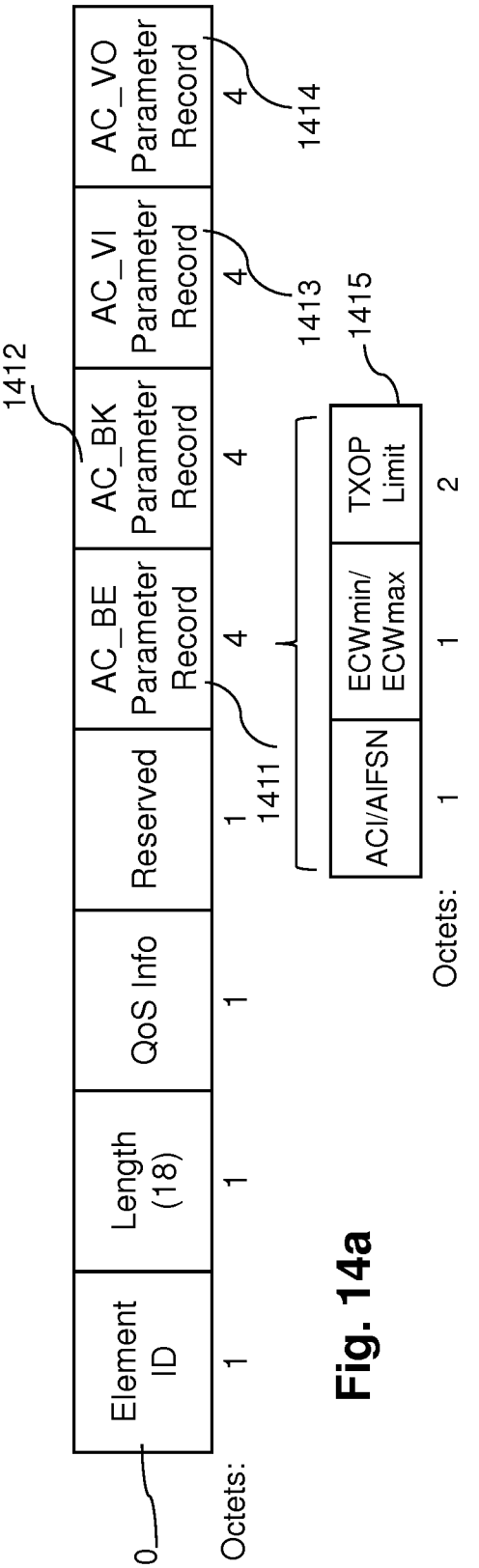


Fig. 14a

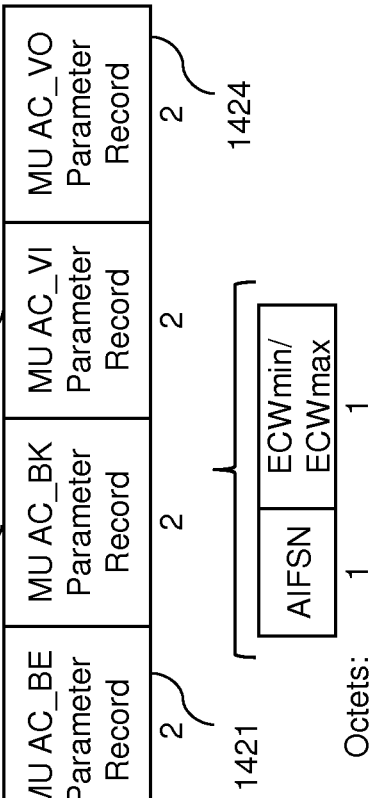


Fig. 14b