FIG. 1

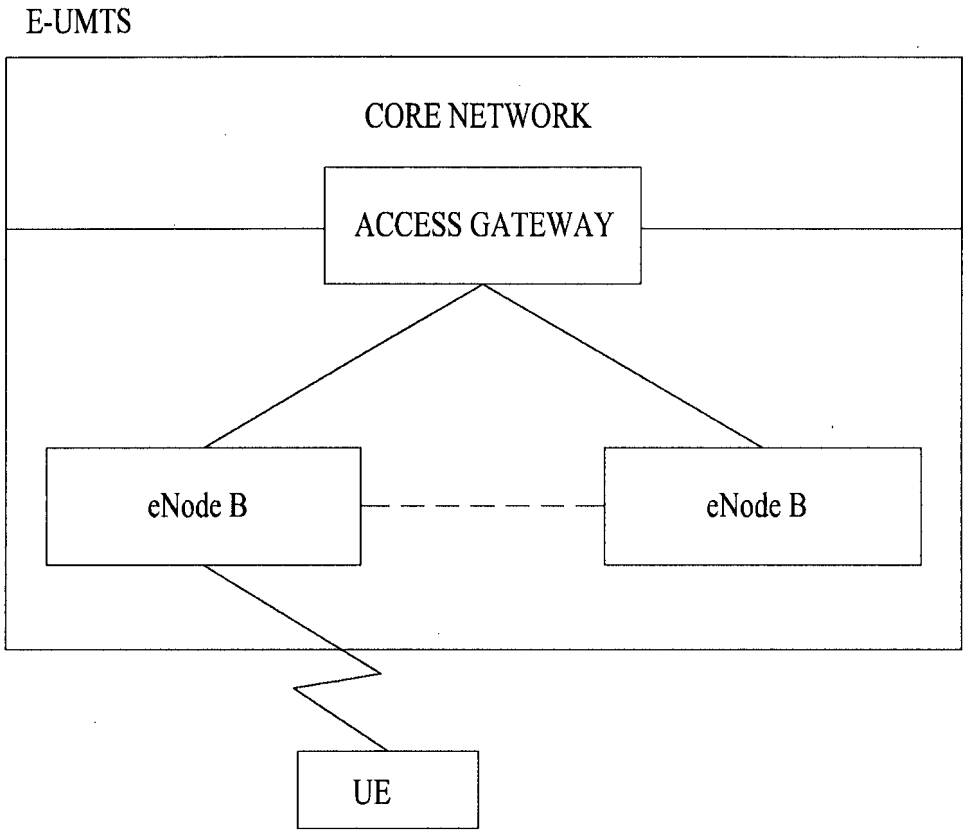
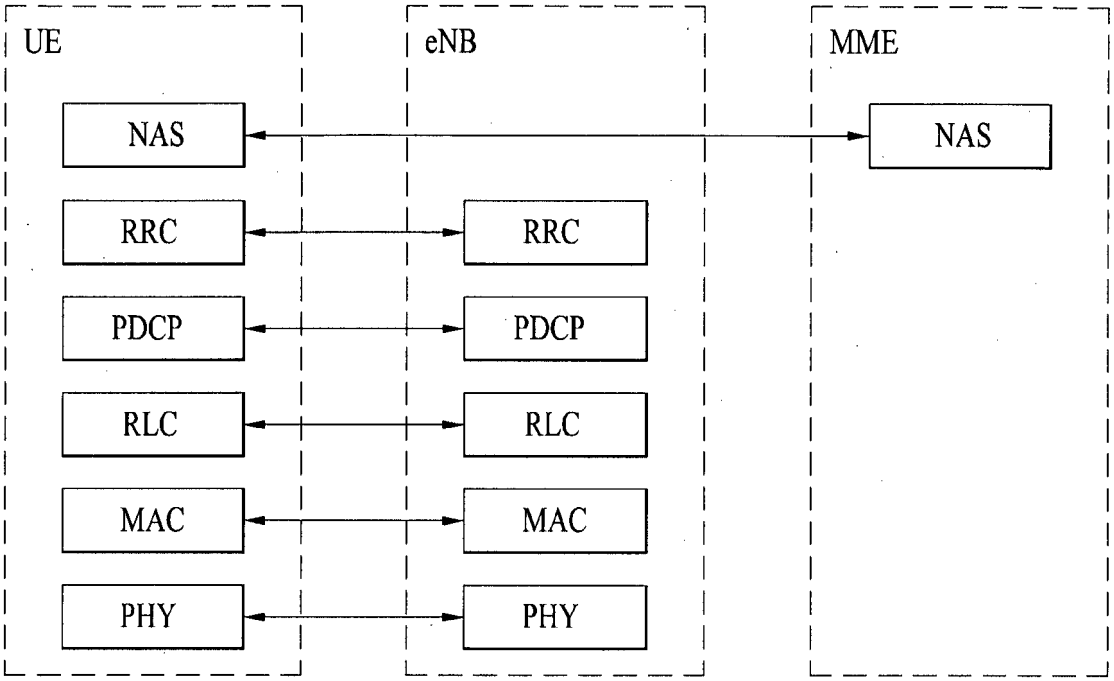
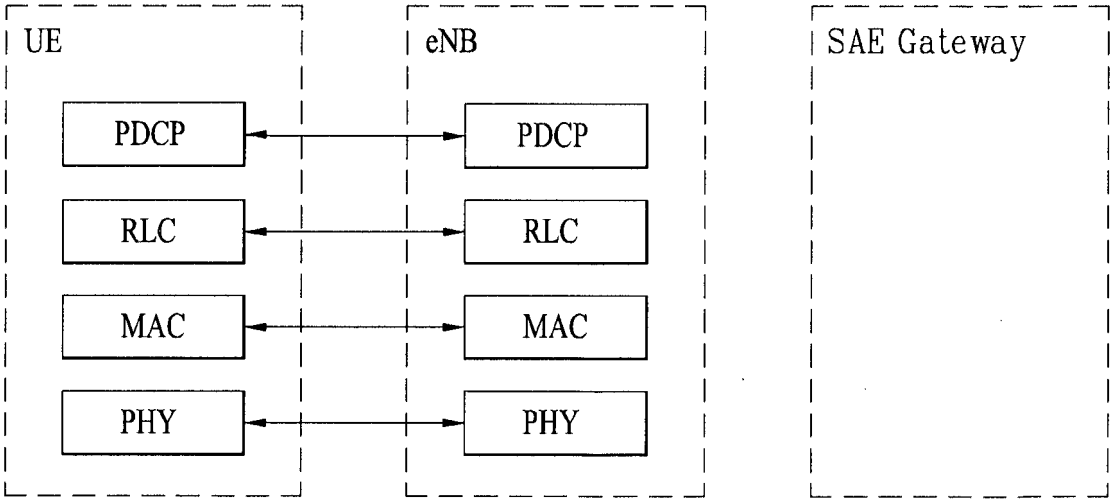


FIG. 2



(A) CONTROL-PLANE PROTOCOL STACK



(B) USER-PLANE PROTOCOL STACK

FIG. 3

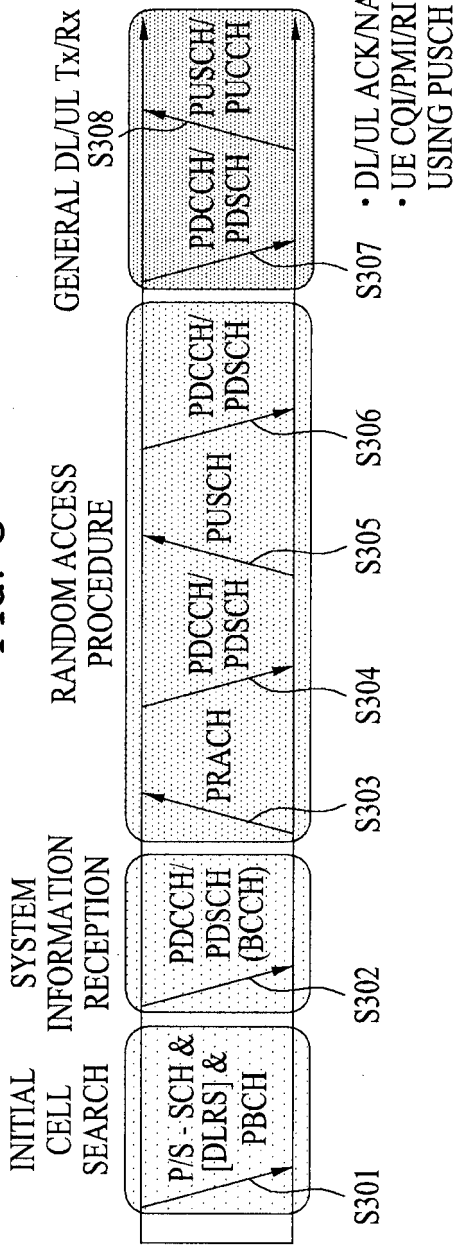

INITIAL CELL SEARCH
SYSTEM INFORMATION RECEPTION
RANDOM ACCESS PROCEDURE
GENERAL DL/UL Tx/Rx
S308
P/S - SCH & [DLRS] & PBCH
PDCCH/ PDSCH (BCCH)
PRACH
PDCCH/ PDSCH
PDCCH/ PUSCH
PDCCH/ PDSCH
PDCCH/ PUSCH/ PUCCH
S301
S302
S303
S304
S305
S306
S307
• DL/UL ACK/NACK
• UE CQI/PMI/RI REPORT USING PUSCH AND PUCCH

FIG. 4

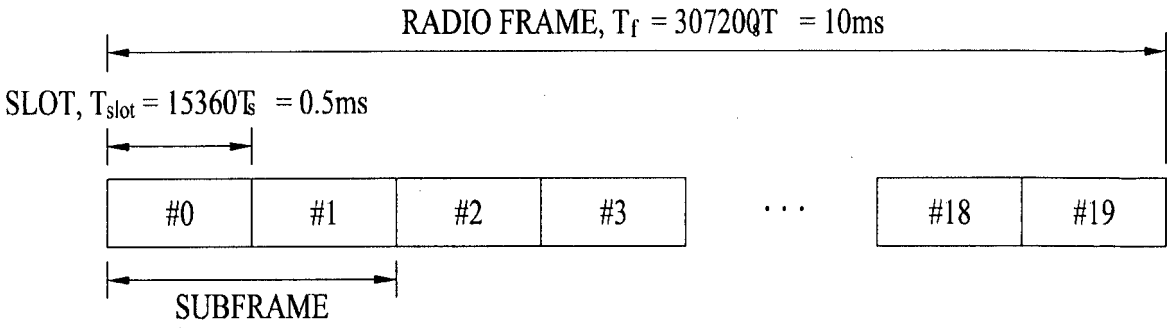

RADIO FRAME, T_f = 30720T_s = 10ms
SLOT, T_{slot} = 15360T_s = 0.5ms
#0
#1
#2
#3
· · ·
#18
#19
SUBFRAME

FIG. 5

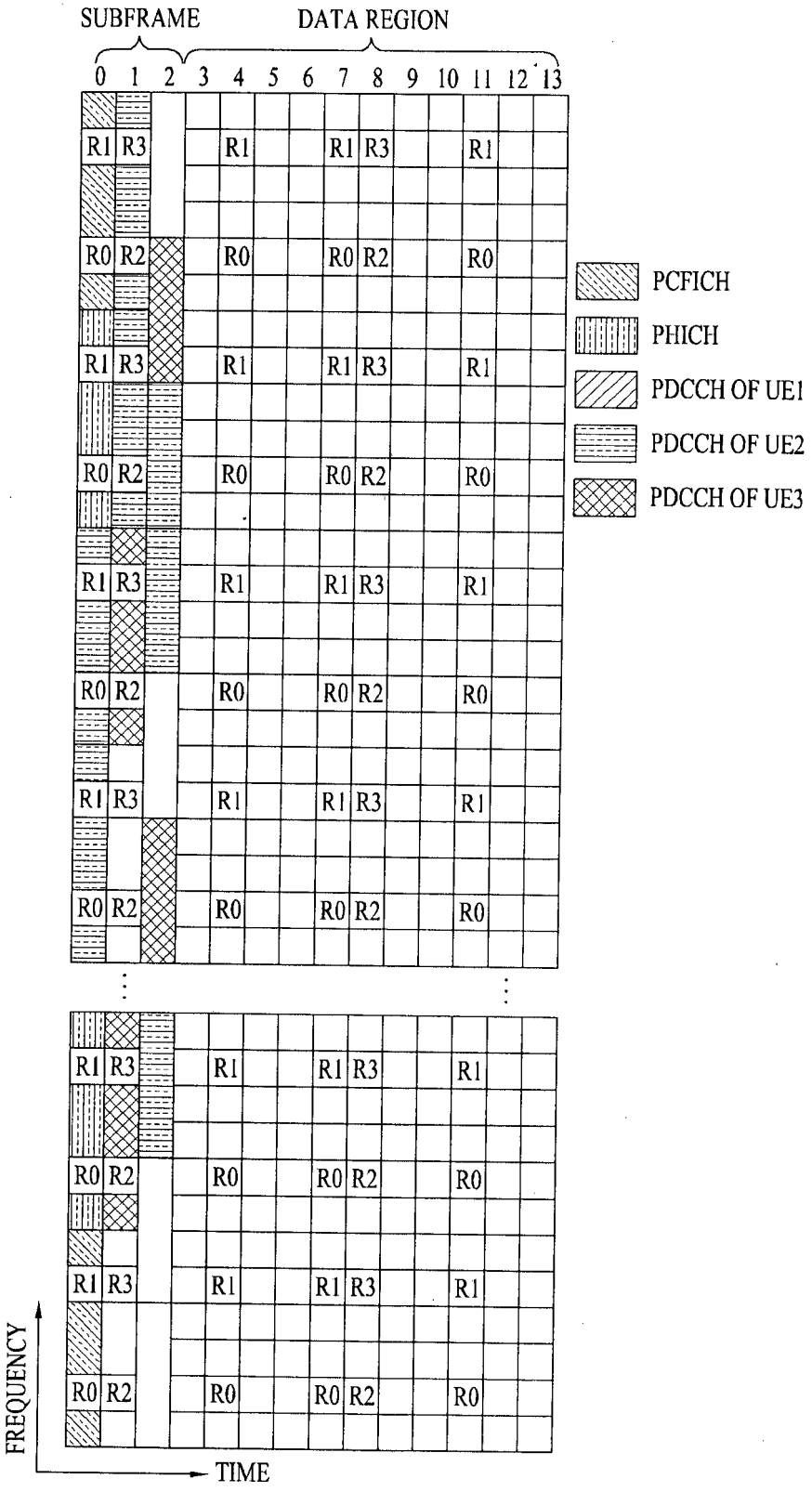

SUBFRAME
DATA REGION
0 1 2 3 4 5 6 7 8 9 10 11 12 13
R1 R3
R0 R2
PCFICH
PHICH
PDCCH OF UE1
PDCCH OF UE2
PDCCH OF UE3
FREQUENCY
TIME

FIG. 6

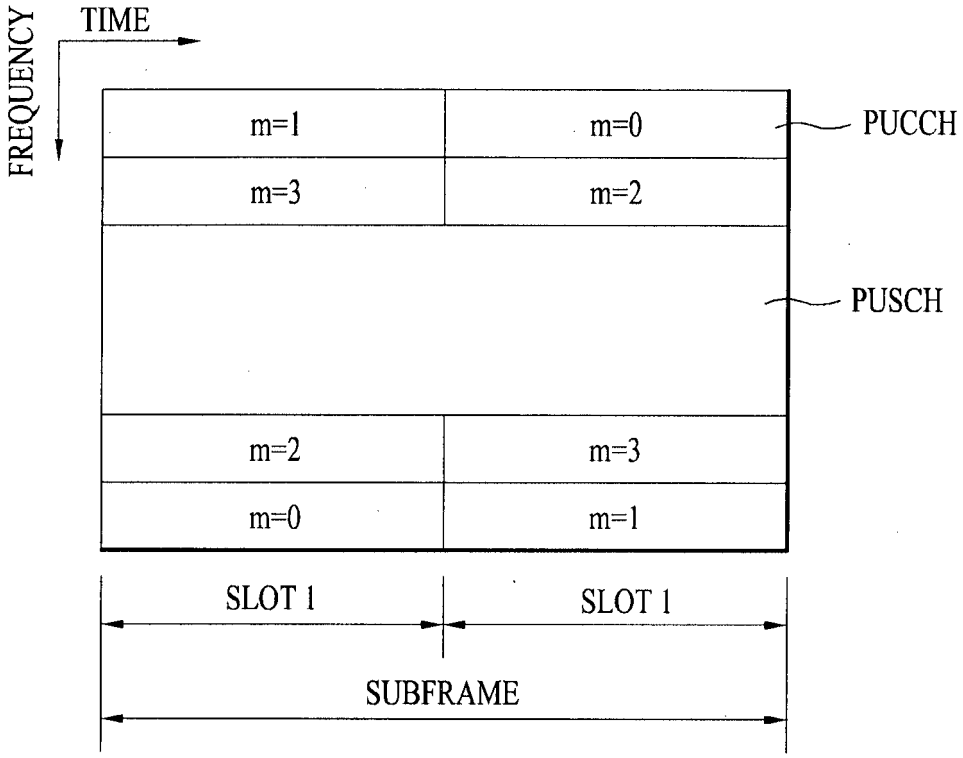

TIME
FREQUENCY
m=1
m=0
PUCCH
m=3
m=2
PUSCH
m=2
m=3
m=0
m=1
SLOT 1
SLOT 1
SUBFRAME

FIG. 7

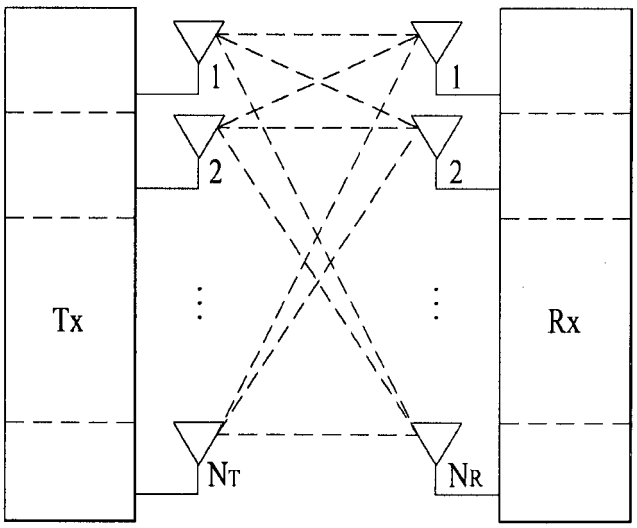

1
1
2
2
Tx
Rx
NT
NR

FIG. 8

CQI REPORTING MODE		PMI FEEDBACK TYPE	
		NO PMI	SINGLE PMI
PUCCH CQI FEEDBACK TYPE	WIDEBAND (WIDEBAND CQI)	MODE 1-0	MODE 1-1
	UE-SELECTED (SUBBAND CQI)	MODE 2-0	MODE 2-1

FIG. 9

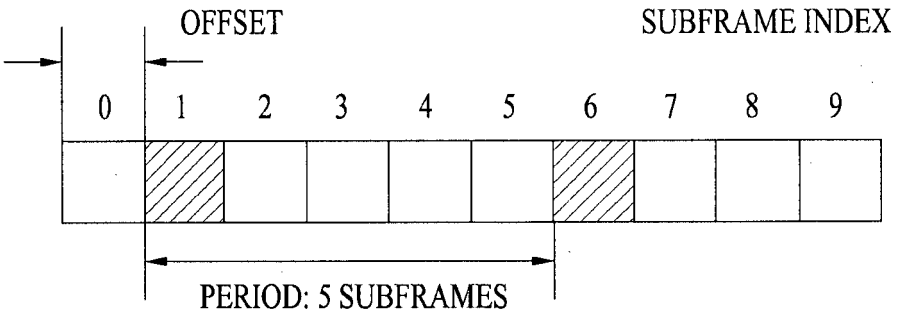


FIG. 10

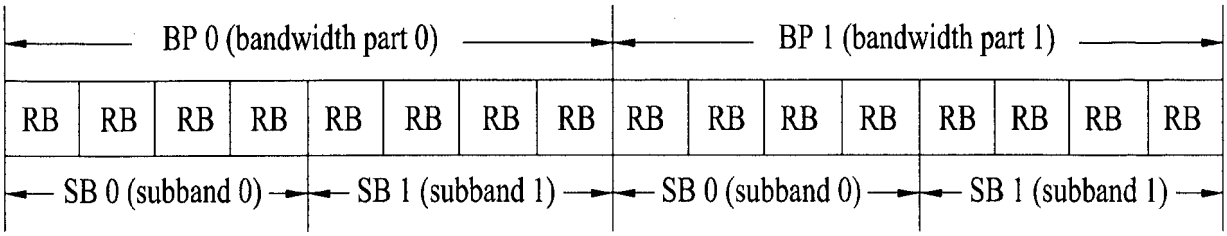
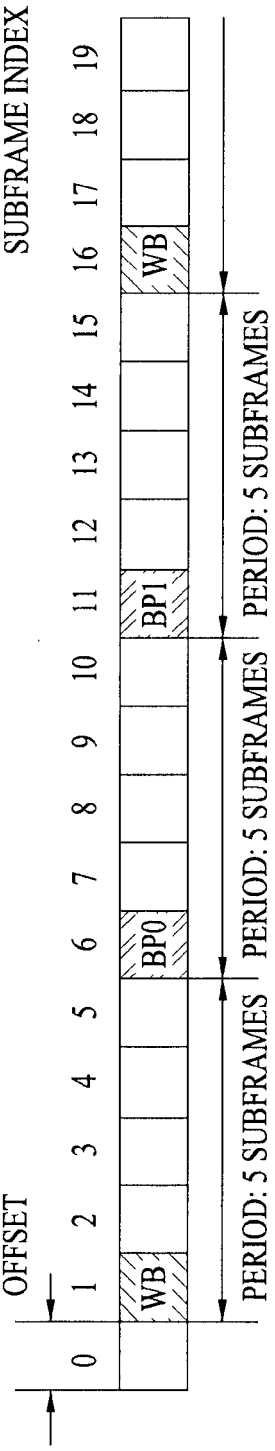
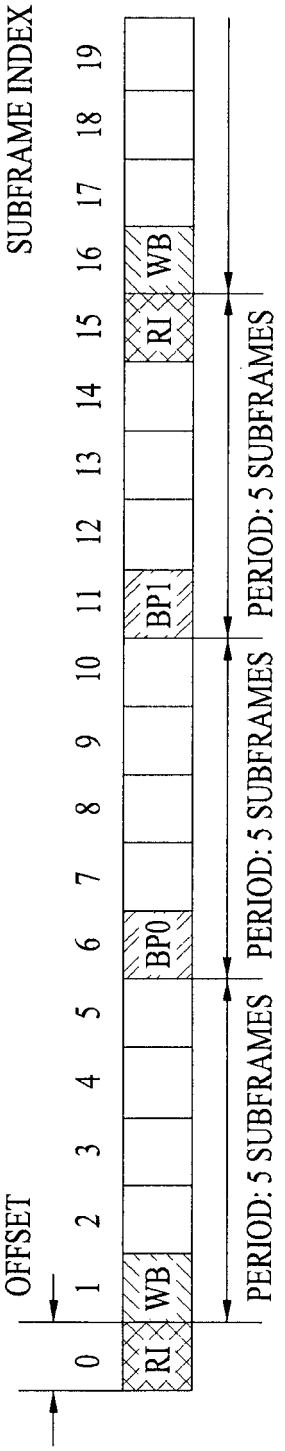

BP 0 (bandwidth part 0)
BP 1 (bandwidth part 1)
RB RB RB RB RB RB RB RB RB RB RB RB RB RB RB RB
SB 0 (subband 0)
SB 1 (subband 1)
SB 0 (subband 0)
SB 1 (subband 1)

FIG. 11



(A) CQI ONLY



(B) CQI AND RI

FIG. 12

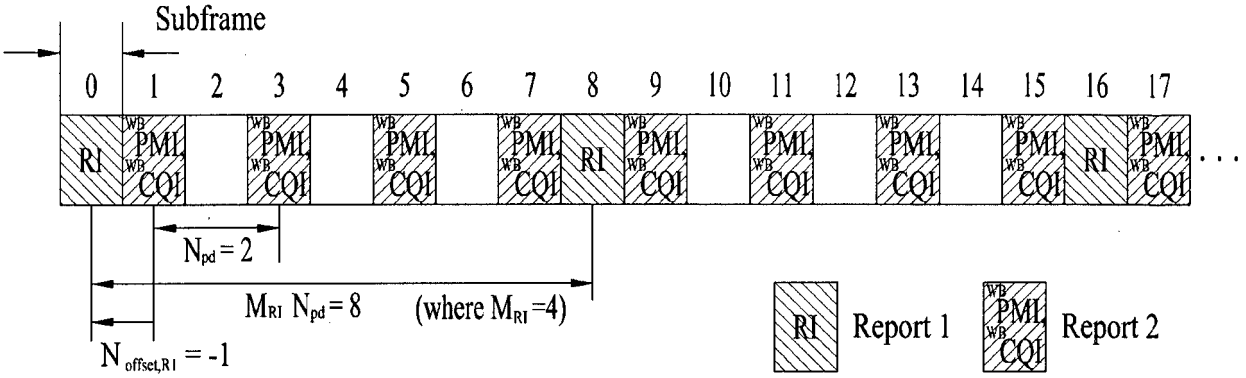

Subframe
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
RI
WB PMI, WB CQI
$N_{pd} = 2$
M_{RI} $N_{pd} = 8$ (where M_{RI} =4)
$N_{offset,RI} = -1$
RI Report 1
WB PMI, WB CQI Report 2

FIG. 13

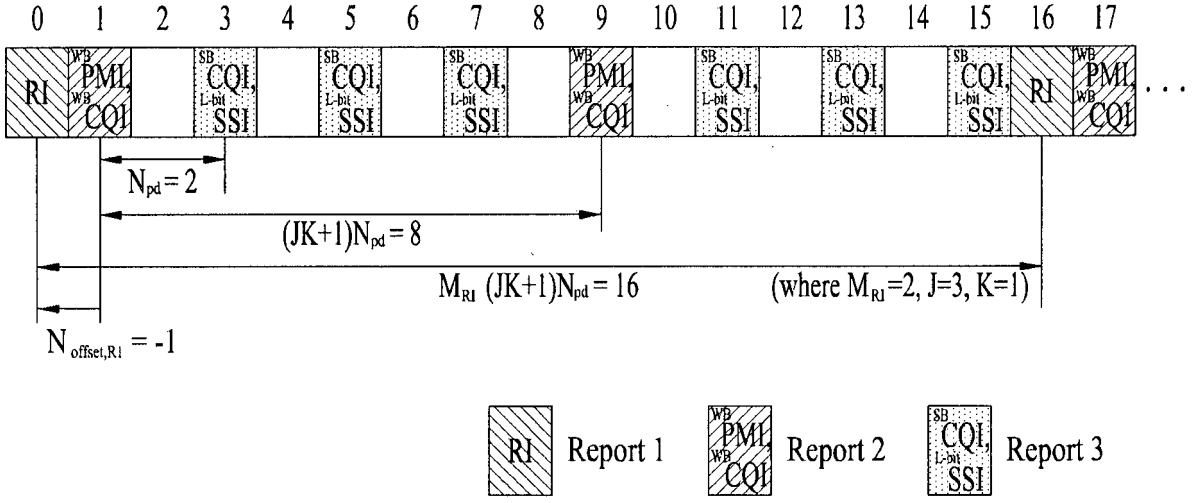
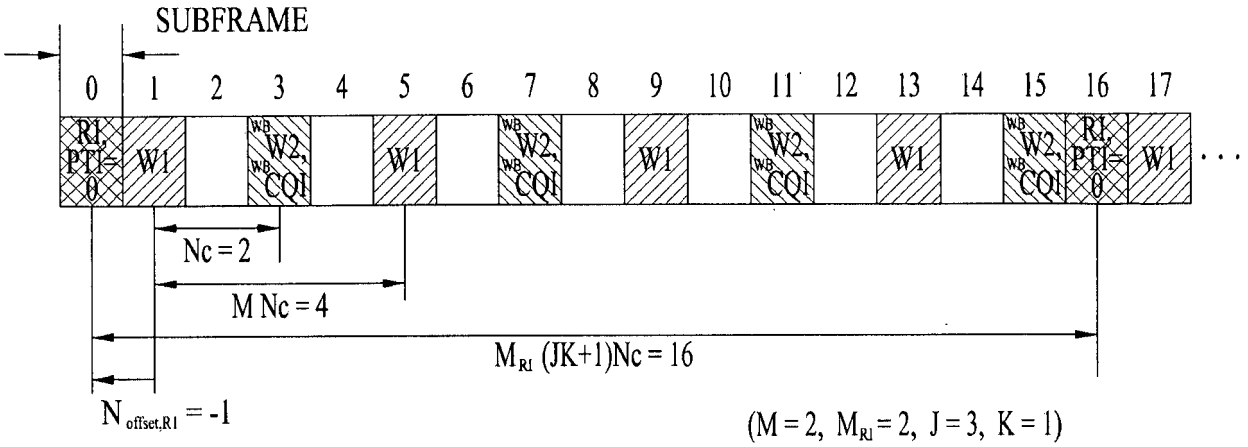
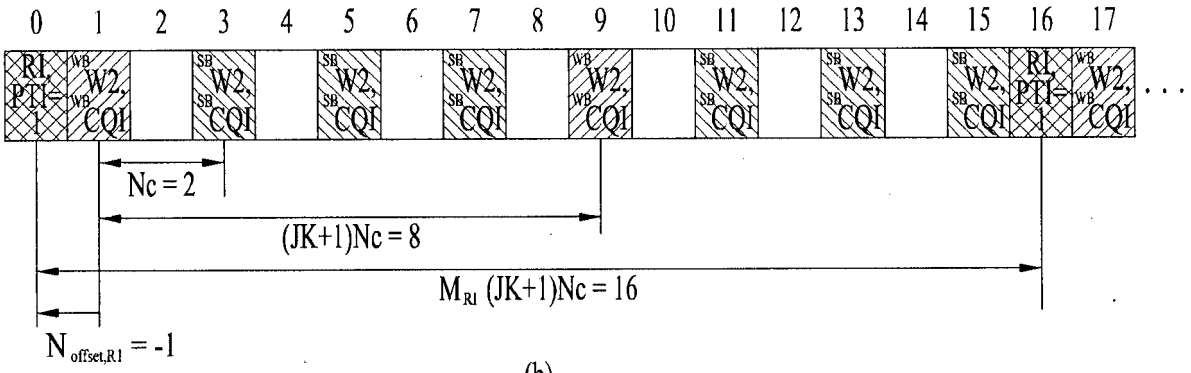

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
RI
WB PMI, WB CQI
SB CQI, L-bit SSI
$N_{pd} = 2$
$(JK+1)N_{pd} = 8$
M_{RI} $(JK+1)N_{pd} = 16$ (where M_{RI}=2, J=3, K=1)
$N_{offset,RI} = -1$
RI Report 1
WB PMI, WB CQI Report 2
SB CQI, L-bit SSI Report 3

FIG. 14


SUBFRAME
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
RI, PTI=0
W1
WB W2, WB CQI
Nc = 2
M Nc = 4
M_{RI} (JK+1)Nc = 16
$N_{offset,RI}$ = -1
(M = 2, M_{RI} = 2, J = 3, K = 1)

(a)


0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
RI, PTI=1
WB W2, WB CQI
SB W2, SB CQI
Nc = 2
(JK+1)Nc = 8
M_{RI} (JK+1)Nc = 16
$N_{offset,RI}$ = -1

(b)

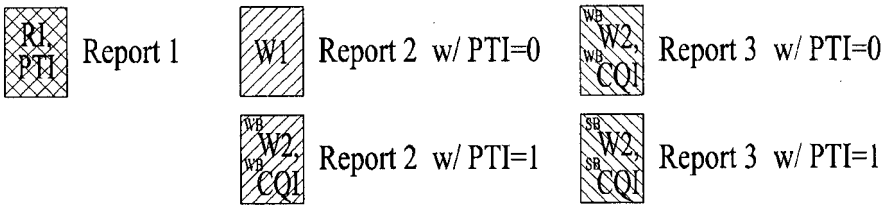

RI, PTI
Report 1
W1
Report 2 w/ PTI=0
WB W2, WB CQI
Report 3 w/ PTI=0
WB W2, WB CQI
Report 2 w/ PTI=1
SB W2, SB CQI
Report 3 w/ PTI=1

FIG. 15

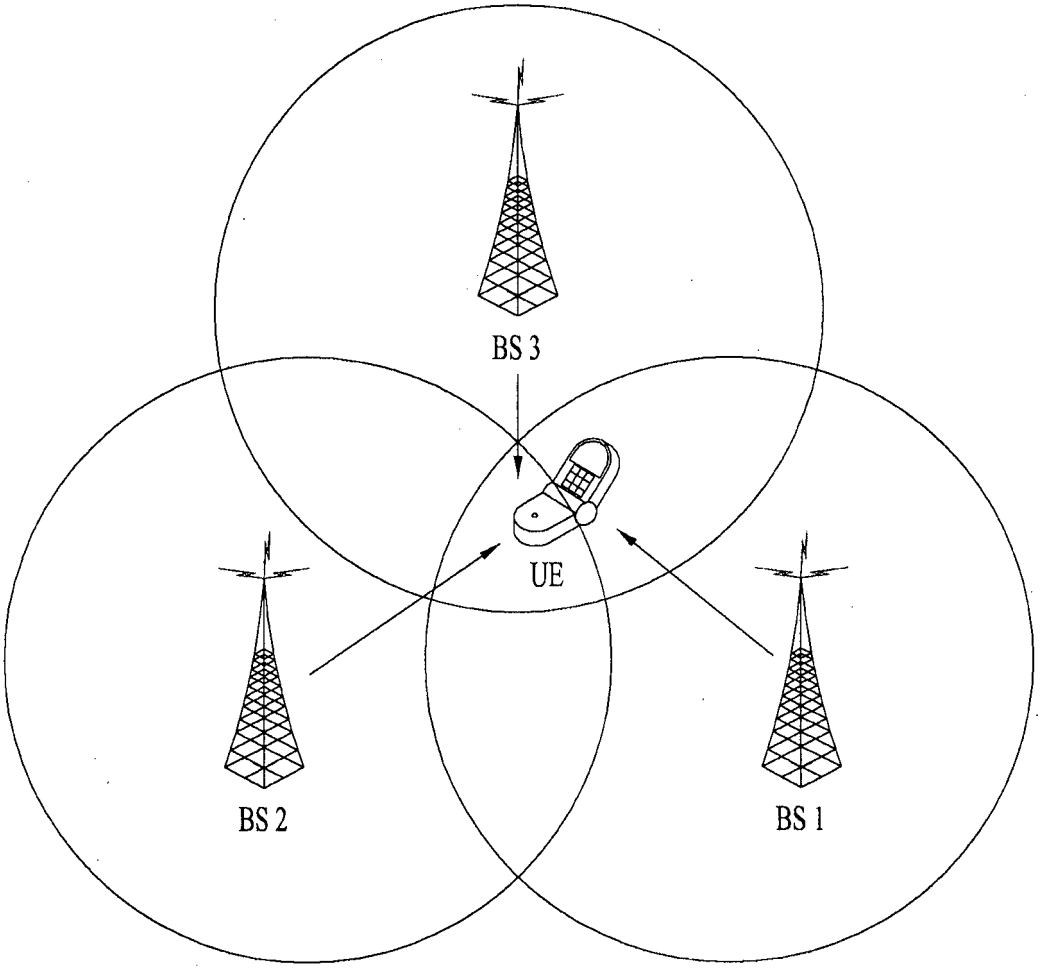

BS 3
UE
BS 2
BS 1

FIG. 16

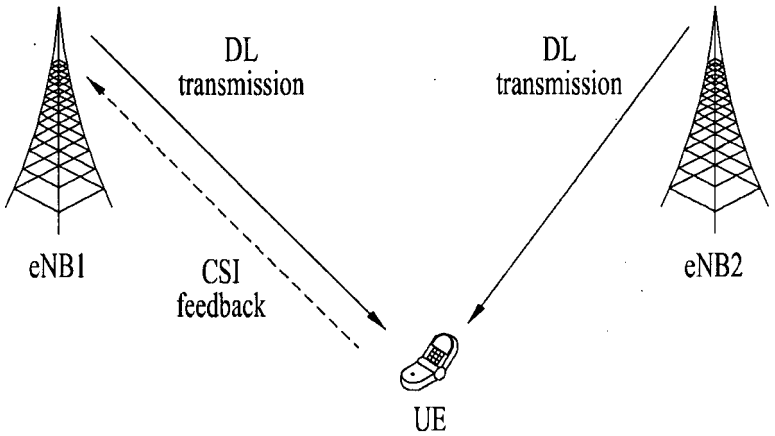

DL
transmission
DL
transmission
eNB1
CSI
feedback
eNB2
UE

FIG. 17

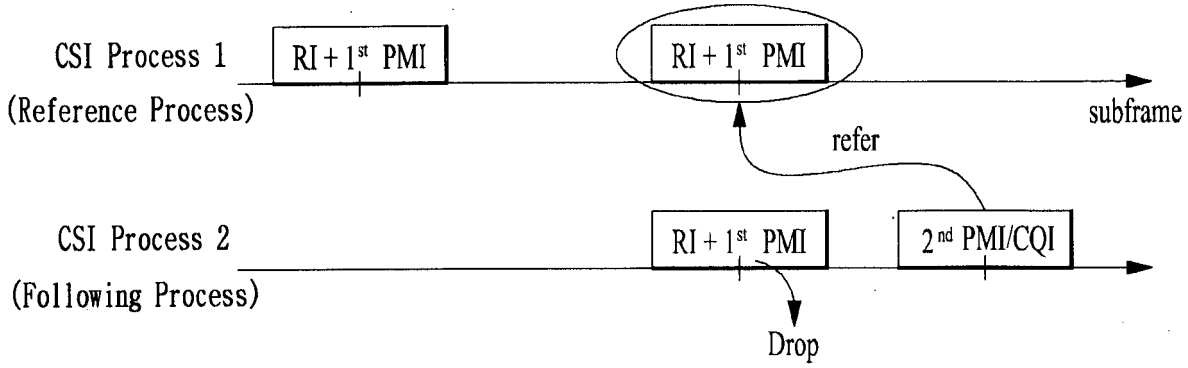


FIG. 18

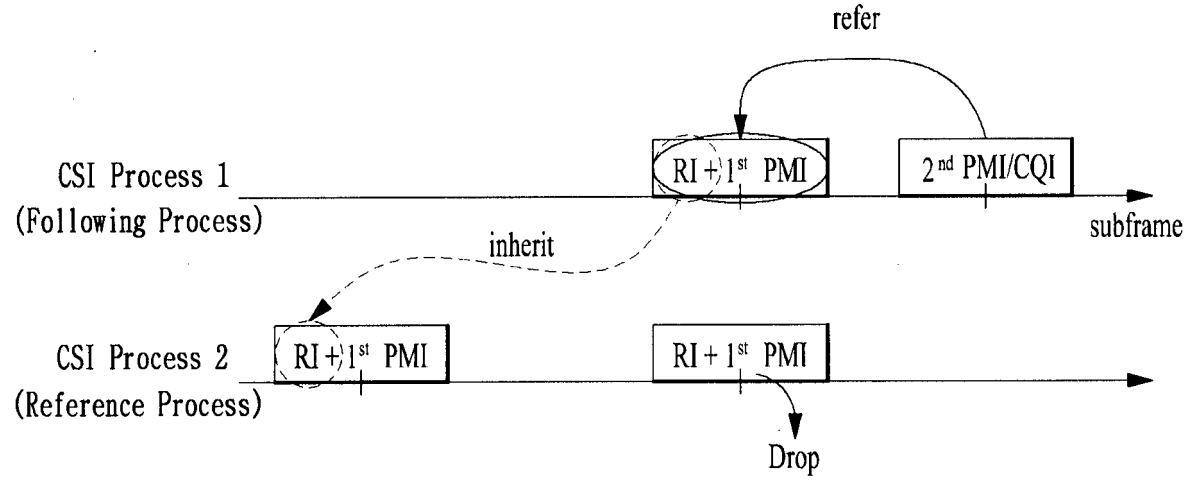


FIG. 19

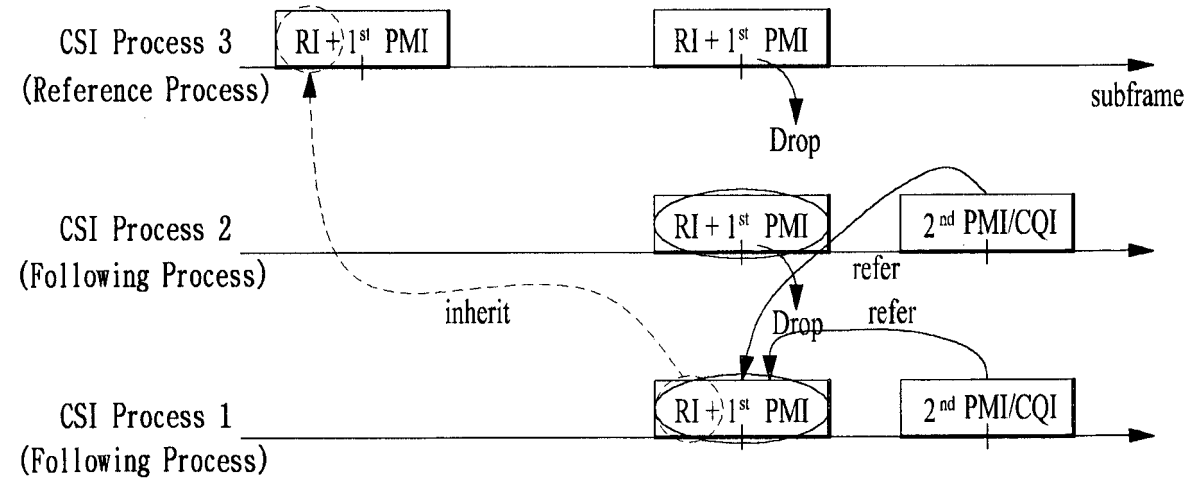
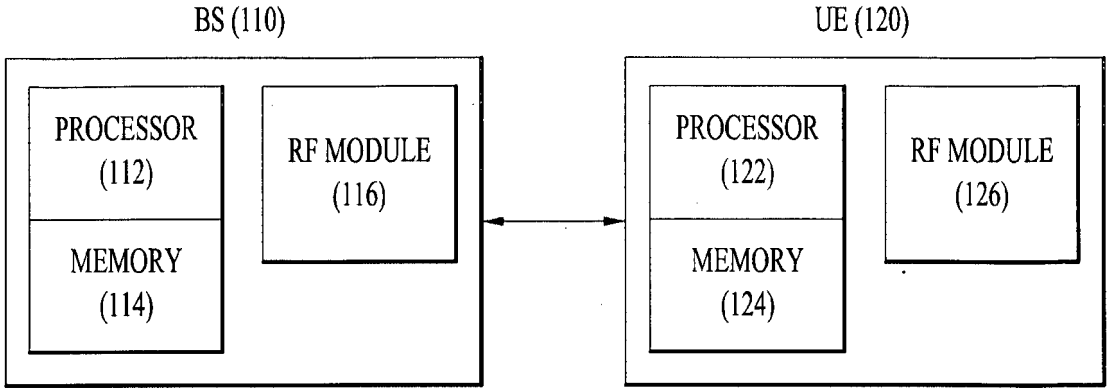


FIG. 20


BS (110)
PROCESSOR (112)
MEMORY (114)
RF MODULE (116)
UE (120)
PROCESSOR (122)
MEMORY (124)
RF MODULE (126)