

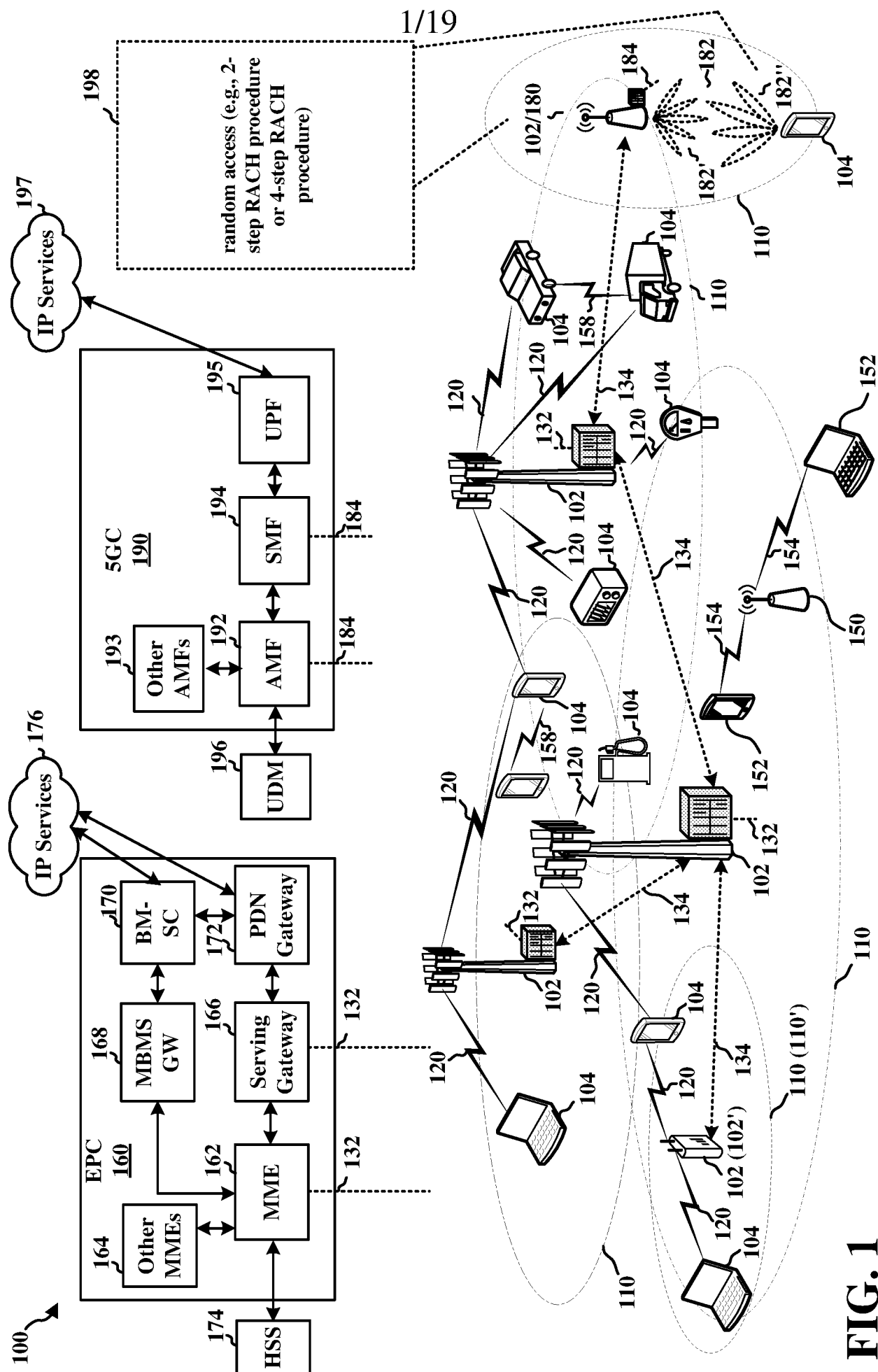
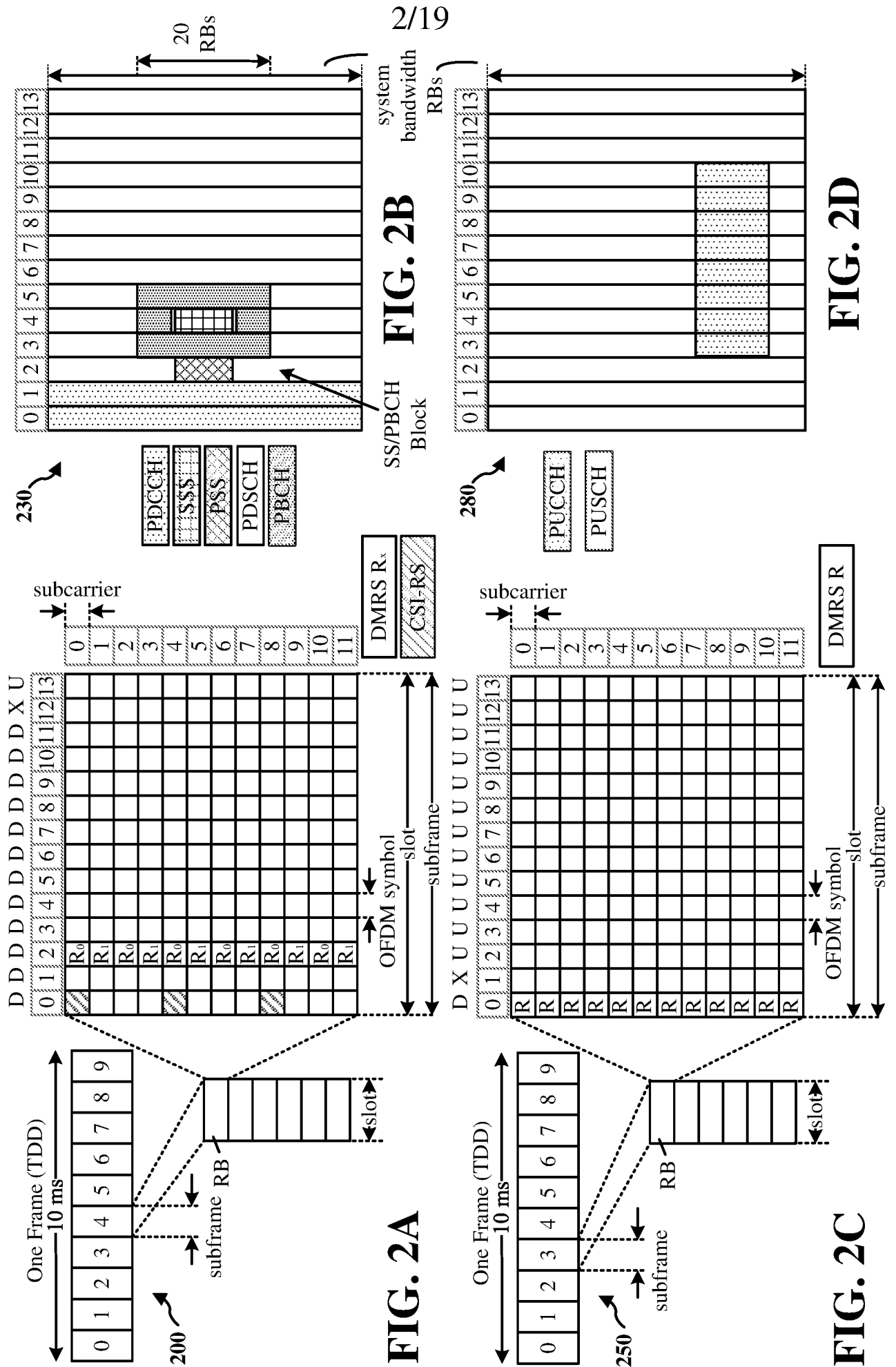


FIG. 1



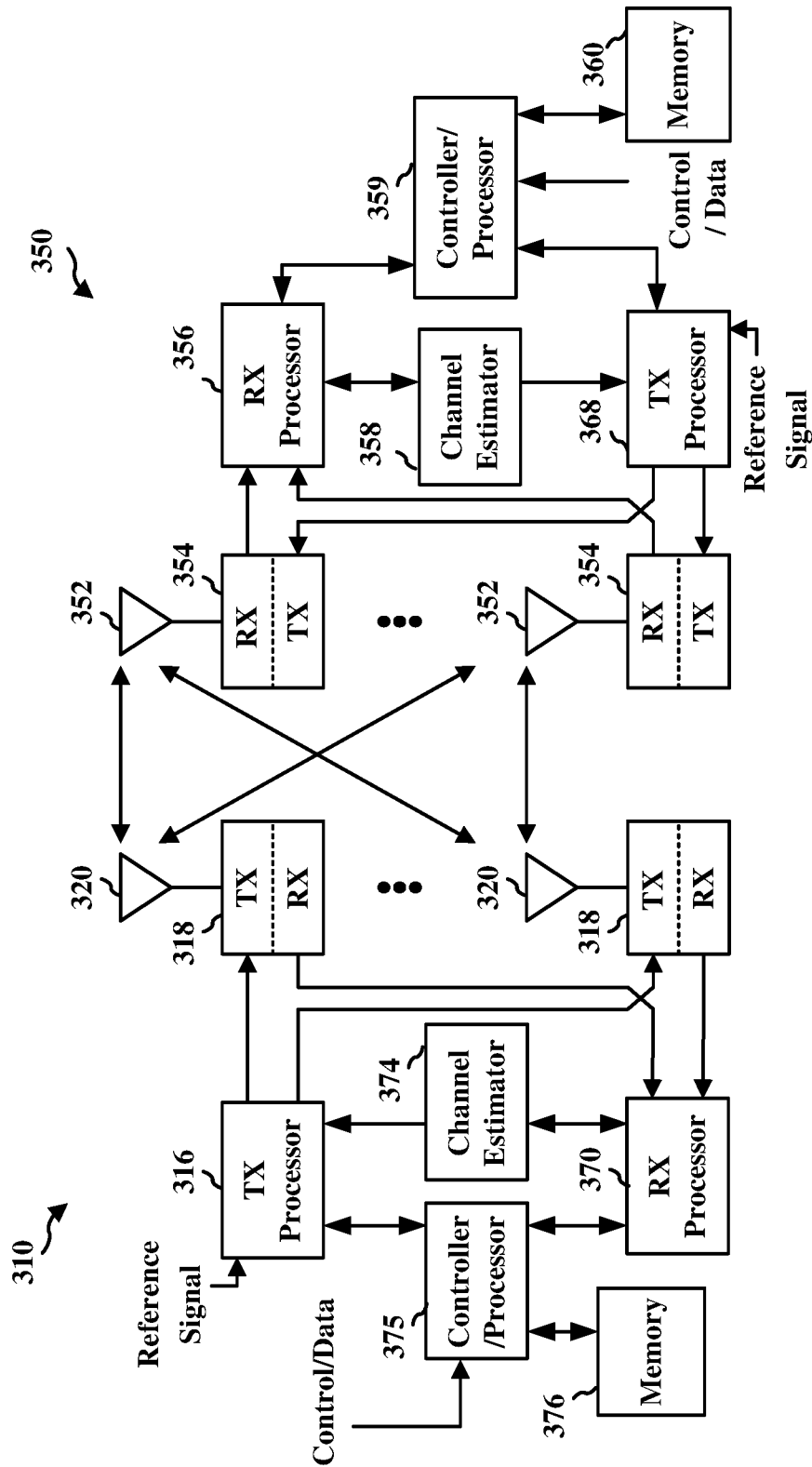


FIG. 3

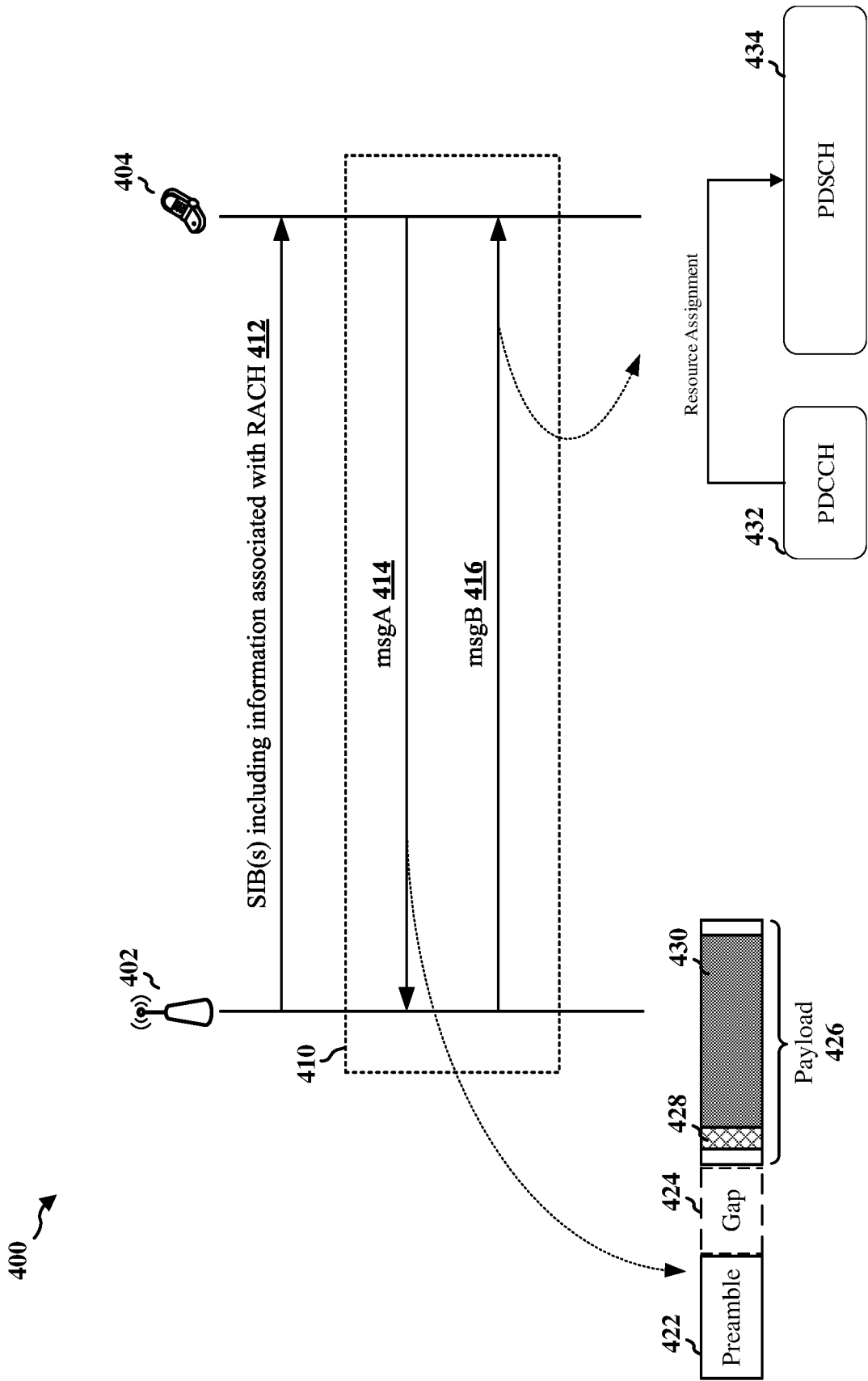


FIG. 4

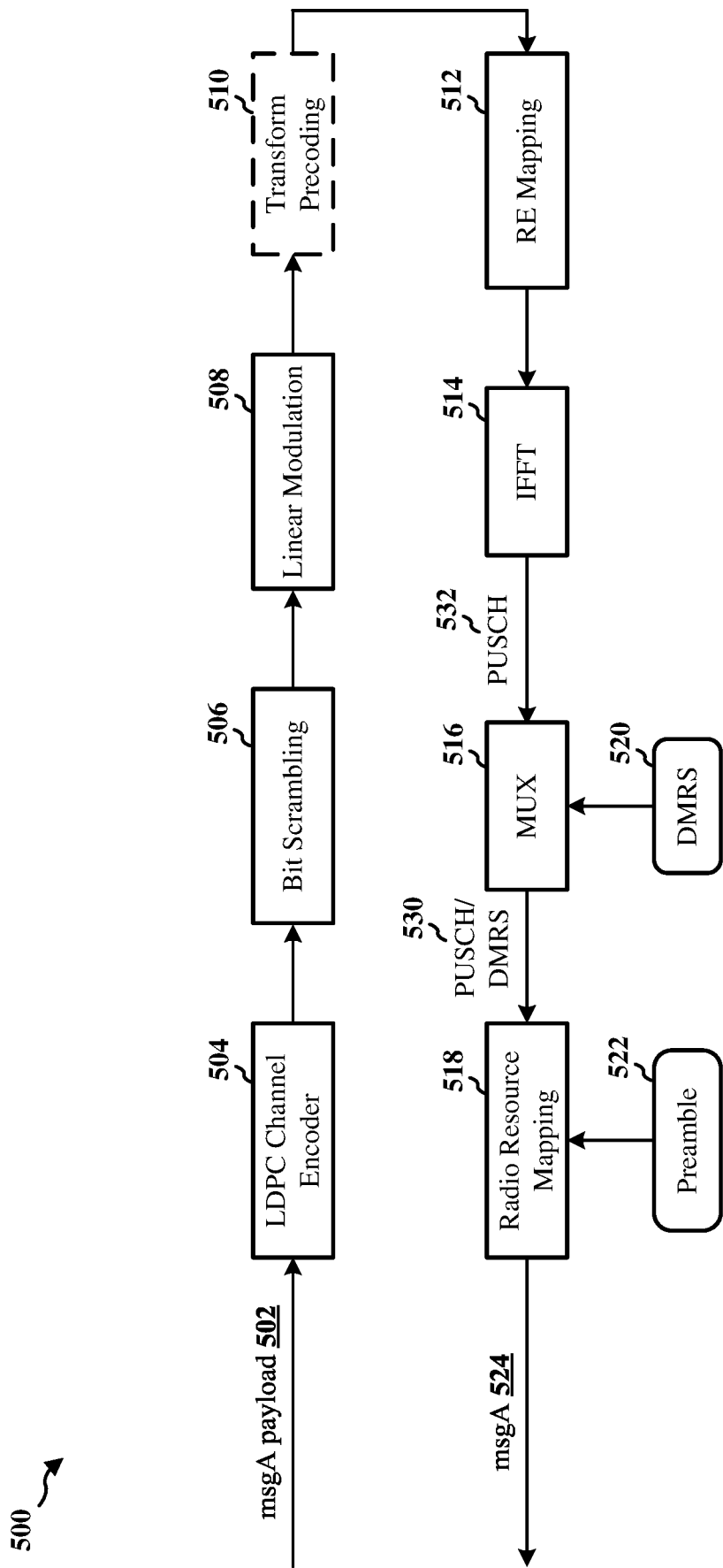


FIG. 5

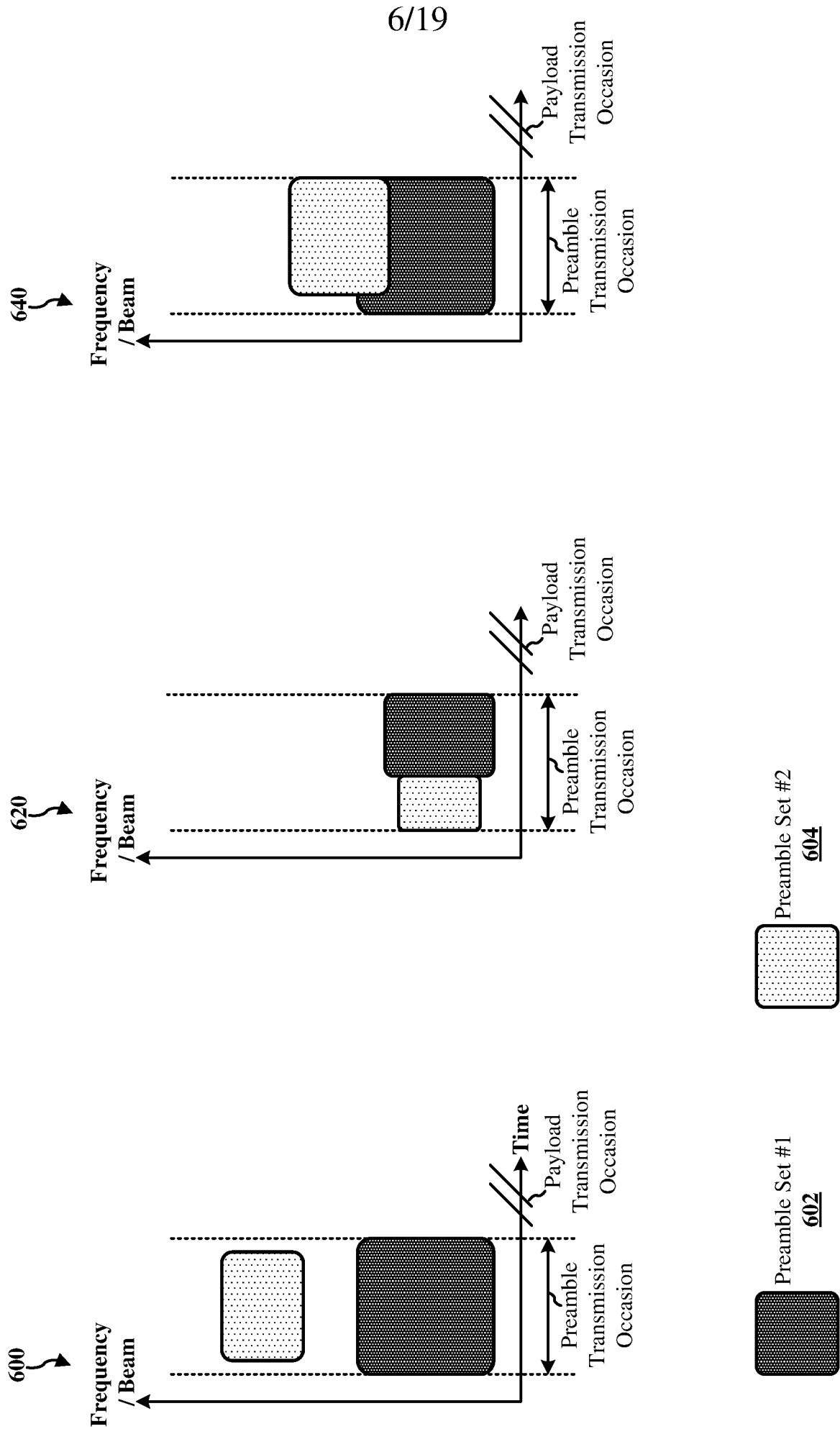


FIG. 6

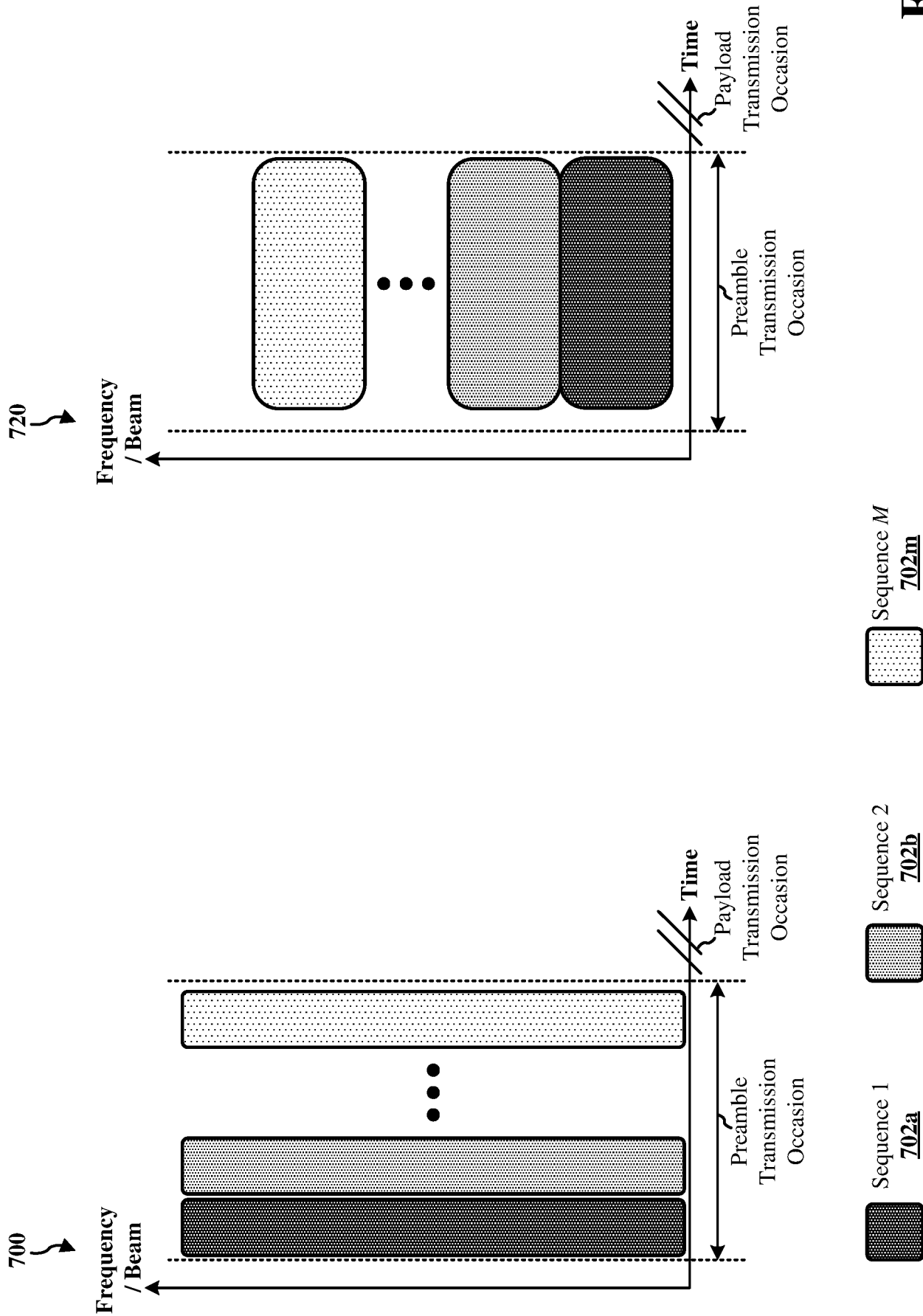


FIG. 7

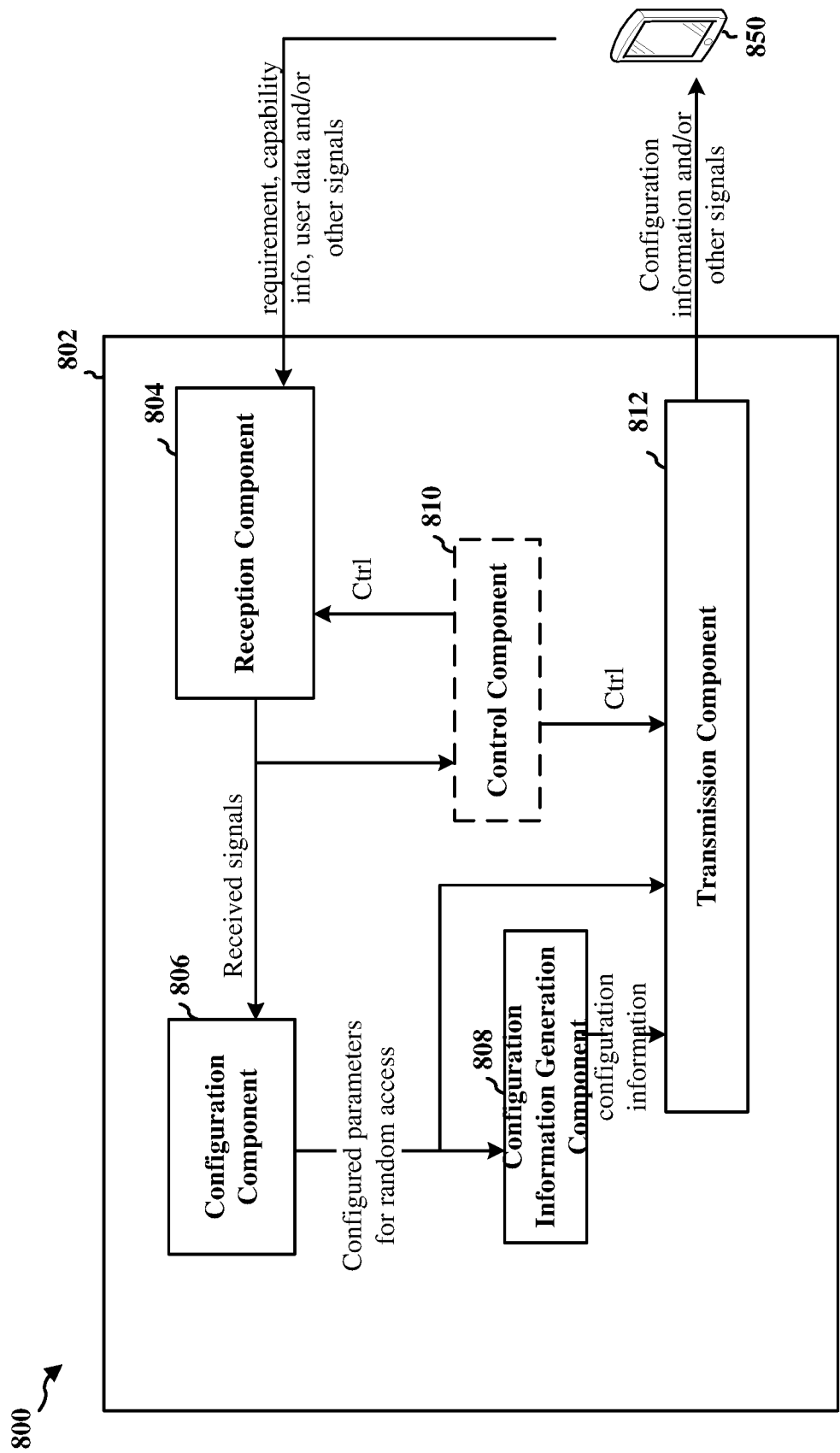


FIG. 8

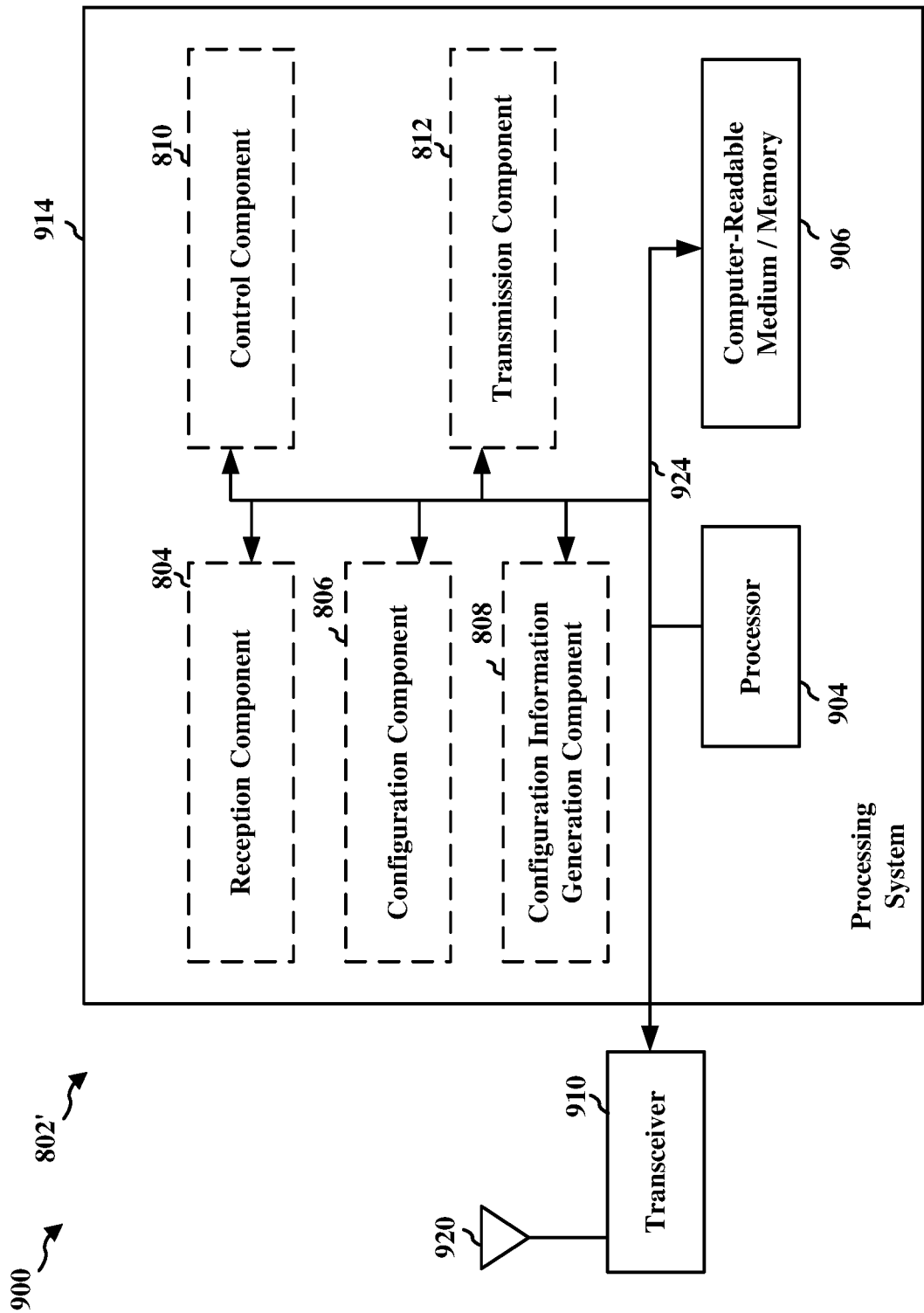


FIG. 9

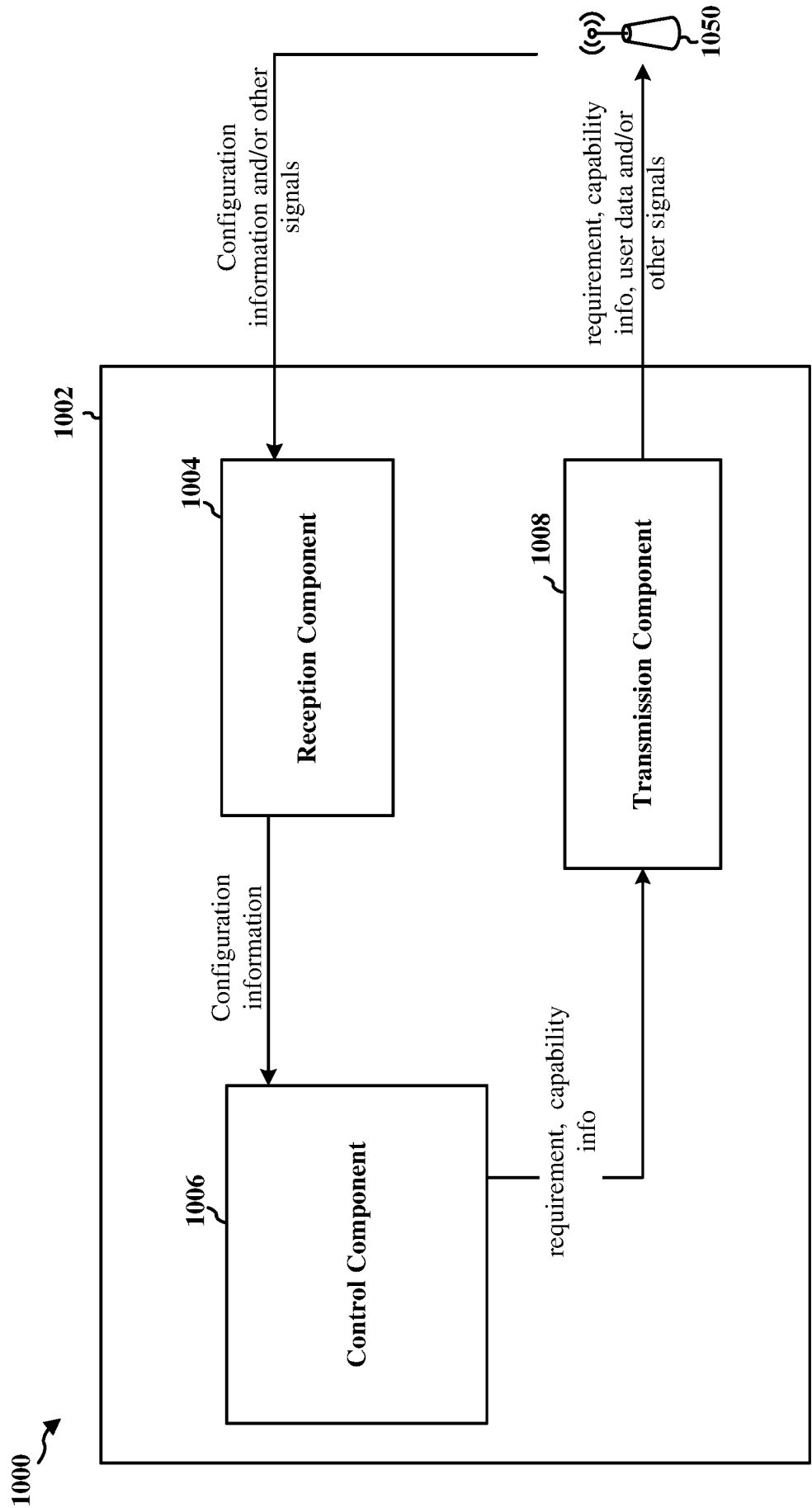


FIG. 10

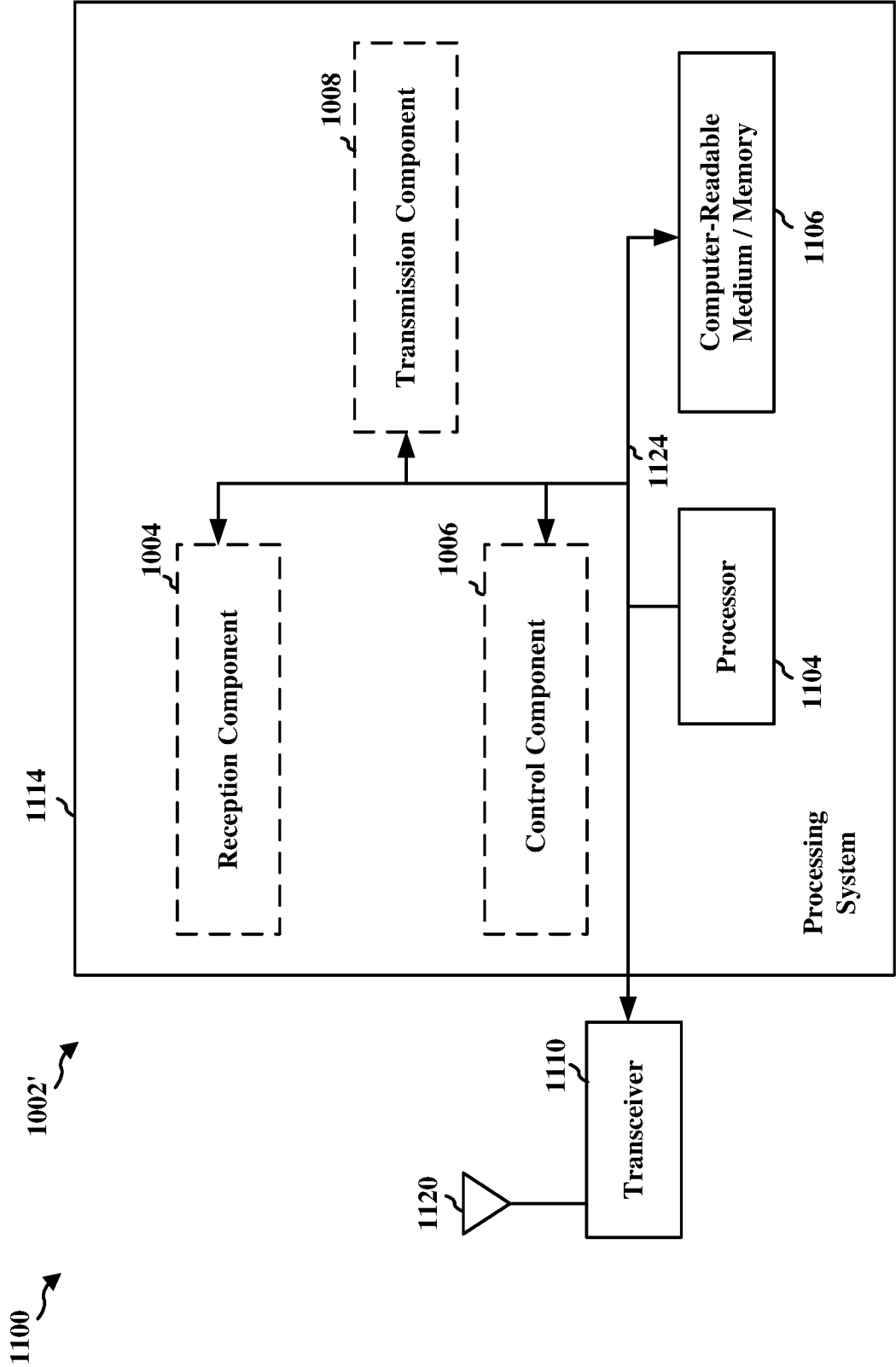


FIG. 11

Index of RO in time/frequency/space Domains	RO#0	RO #1	RO #2	RO#3
Without 2-step RACH	4-step RACH	4-step RACH	4-step RACH	4-step RACH
With 2-step RACH	4-step RACH	2-step RACH	4-step RACH	2-step RACH

FIG. 12

Index of RO in time/frequency/space Domains	RO#0	RO #1	RO #2	RO#3
Without 2-step RACH	4-step RACH	4-step RACH	4-step RACH	4-step RACH
With 2-step RACH	4-step RACH	4-step RACH and 2-step RACH	4-step RACH	4-step RACH

FIG. 13

Index of RO in time/frequency/space Domains	RO#0	New RO#0	RO#1	RO#2	New RO#1	RO#3
Without 2-step RACH	4-step RACH	n/a	4-step RACH	4-step RACH	n/a	4-step RACH
With 2-step RACH	4-step RACH	2-step RACH	4-step RACH	4-step RACH	2-step RACH	4-step RACH

FIG. 14

Slot-based Structure for msgA ($K \geq 1$, $Q \geq 0$, $M \geq 1$)

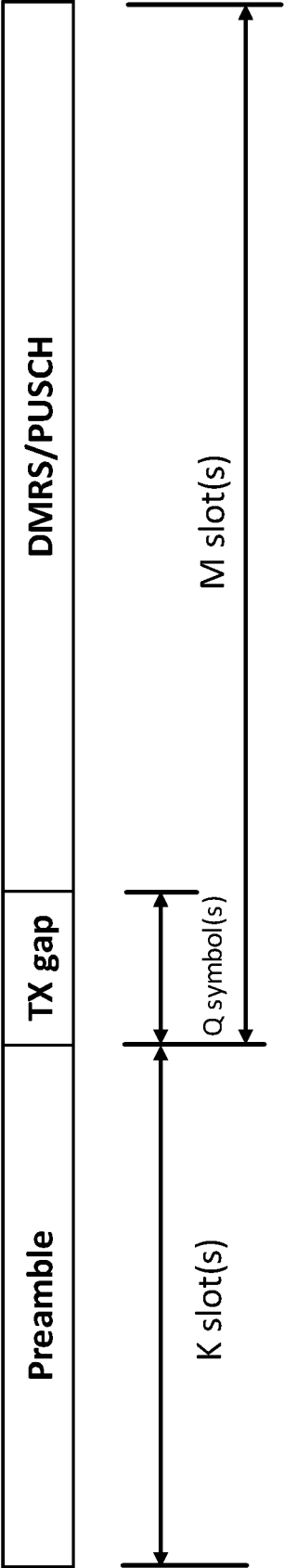


FIG. 15

Symbol-based Structure for msgA ($K \geq 1$, $Q \geq 0$, $M \geq 1$)

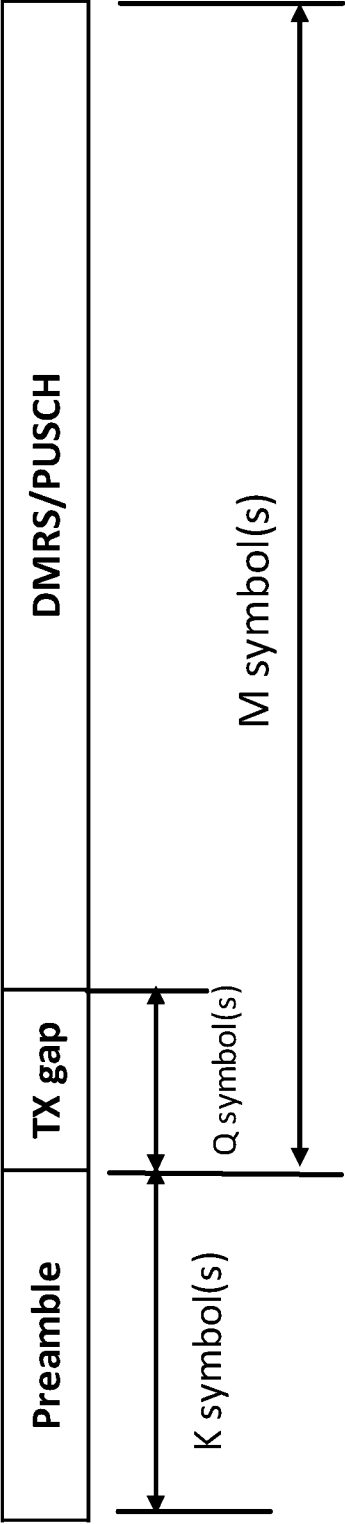


FIG. 16

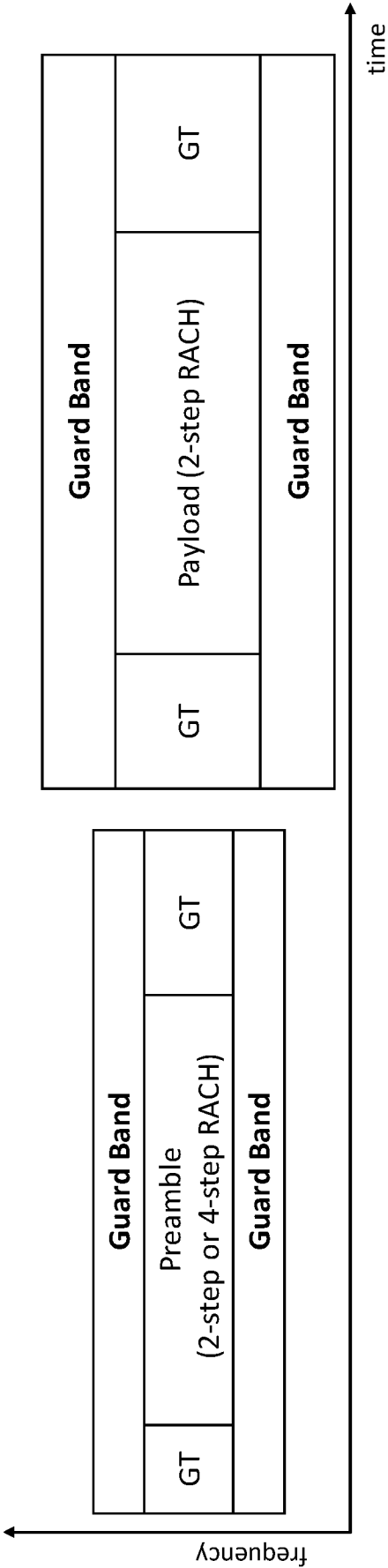


FIG. 17

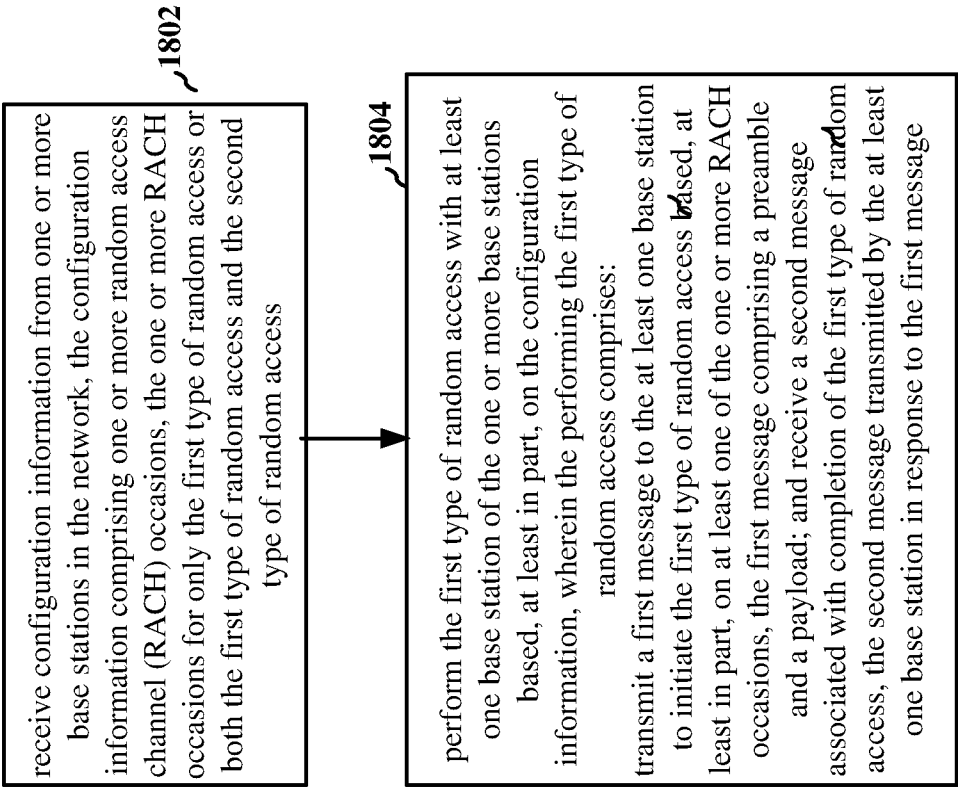


FIG. 18

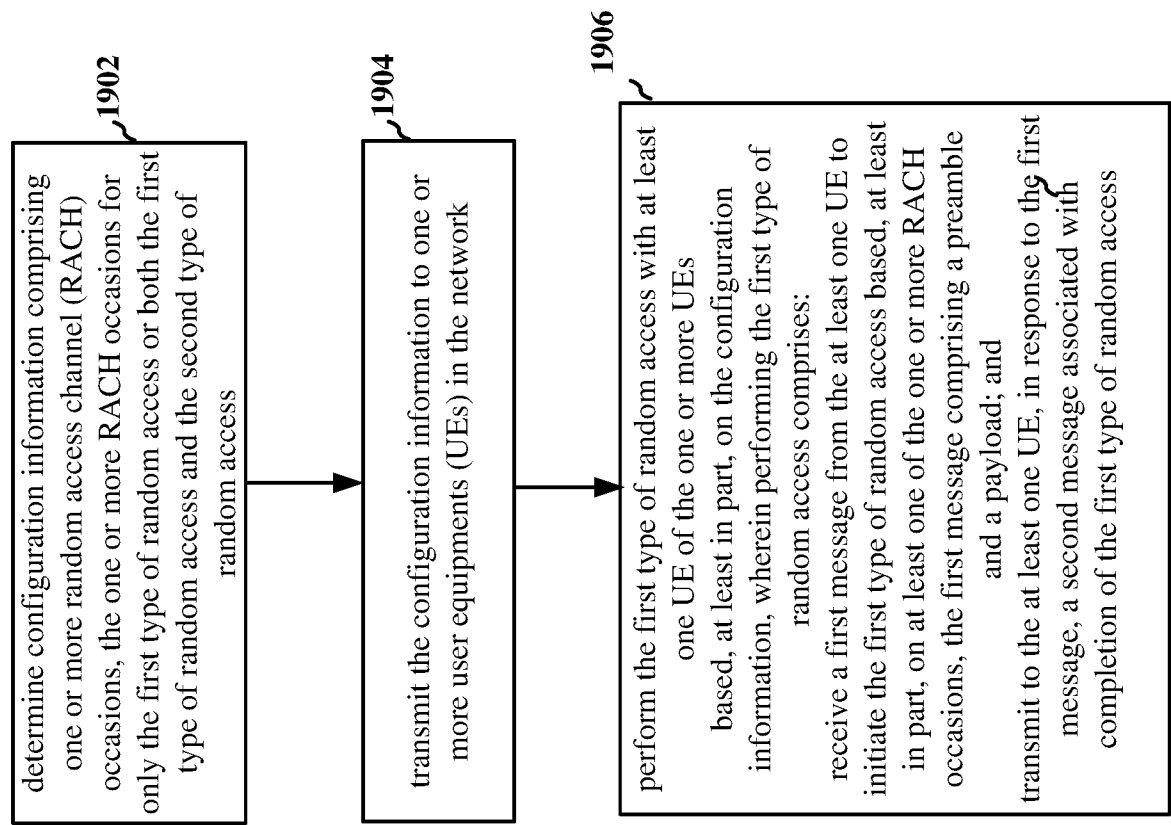


FIG. 19