

【Claims】

1. A method of transmitting a random access channel (RACH) by a user equipment (UE) in a wireless communication system, the method comprising:

receiving first information related to transmission of at least one synchronization signal block (SSB), and second information related to (i) a plurality of RACH resources in which to transmit the RACH, and (ii) a time period within which to transmit the RACH in the plurality of RACH resources;

determining a mapping of the at least one SSB to at least one first RACH resource among the plurality of RACH resources within the time period, wherein the mapping comprises repeated mappings of the at least one SSB over the at least one first RACH resource by a positive integer number of times within the time period; and

transmitting the RACH in a RACH resource among the at least one first RACH resource that is mapped to the at least one SSB,

wherein the plurality of RACH resources further comprises at least one second RACH resource that remains unmapped to the at least one SSB after the positive integer number of repeated mappings of the at least one SSB over the at least one first RACH resource, and

wherein the RACH is not transmitted in the at least one second RACH resource that remains unmapped to the at least one SSB.

2. The method according to claim 1, wherein, in a state in which a number of SSBs which can be mapped per RACH resource is less than 1, one SSB is mapped to as many consecutive first RACH resources as a reciprocal of the number of SSBs which can be mapped per RACH resource.

3. A user equipment (UE) configured to transmit a random access channel (RACH) in a wireless communication system, the UE comprising:

a transceiver;

at least one processor; and

at least one computer memory operably connectable to the at least one processor and storing instructions that, when executed, cause the at least one processor perform operations comprising:

receiving, through the transceiver, first information related to transmission of at least one synchronization signal block (SSB), and second information related to (i) a plurality of RACH resources in which to transmit the RACH, and (ii) a time period within which to transmit the RACH in the plurality of RACH resources;

determining a mapping of the at least one SSB to at least one first RACH resource among the plurality of RACH resources within the time period, wherein the mapping comprises repeated mappings of the at least one SSB over the at least one first RACH resource by a positive integer number of times within the time period; and

transmitting, through the transceiver, the RACH in a RACH resource among the at least one first RACH resource that is mapped to the at least one SSB,

wherein the plurality of RACH resources further comprises at least one second RACH resource that remains unmapped to the at least one SSB after the positive integer number of repeated mappings of the at least one SSB over the at least one first RACH resource, and

wherein the RACH is not transmitted by the UE in the at least one second RACH resource that remains unmapped to the at least one SSB.

4. The UE according to claim 3, wherein, when in a state in which a number of SSBs which can be mapped per RACH resource is less than 1, one SSB is mapped to as many consecutive first RACH resources as a reciprocal of the number of SSBs which can be mapped per RACH resource.

5. A method of receiving a random access channel (RACH) by a base station from a user equipment (UE) in a wireless communication system, the method comprising:

transmitting, to the UE, first information related to the UE's transmission of at least one synchronization signal block (SSB), and second information related to (i) a plurality of RACH resources in which the UE is to transmit the RACH, and (ii) a time period within which the UE is to transmit the RACH in the plurality of RACH resources;

determining a mapping of the at least one SSB to at least one first RACH resource among the plurality of RACH resources within the time period, wherein the mapping comprises repeated mappings of the at least one SSB over the at least one first RACH resource by a positive integer number of times within the time period; and

receiving, from the UE, the RACH in a RACH resource among the at least one first RACH resource that is mapped to the at least one SSB,

wherein the plurality of RACH resources further comprises at least one second RACH resource that remains unmapped to the at least one SSB after the positive integer number of repeated mappings of the at least one SSB over the at least one first RACH resource, and

wherein the RACH is not transmitted by the UE in the at least one second RACH resource that remains unmapped to the at least one SSB.

6. The method according to claim 5, further comprising:

acquiring, based on the first RACH resource in which the RACH was received, information about the at least one SSB that corresponds to a synchronization to be acquired by the UE.

7. A base station (BS) configured to receive, from a user equipment (UE), a random access channel (RACH) in a wireless communication system, the BS comprising:

a transceiver;

at least one processor; and

at least one computer memory operably connectable to the at least one processor and storing instructions that, when executed, cause the at least one processor perform operations comprising:

transmitting, through the transceiver and to the UE, first information related to the UE's transmission of at least one synchronization signal block (SSB), and second information related to (i) a plurality of RACH resources in which the UE is to transmit the RACH, and (ii) a time period within which the UE is to transmit the RACH in the plurality of RACH resources;

determining a mapping of the at least one SSB to at least one first RACH resource among the plurality of RACH resources within the time period, wherein the mapping comprises repeated mappings of the at least one SSB over the at least one first RACH resource by a positive integer number of times within the time period; and

receiving, through the transceiver and from the UE, the RACH in a RACH resource among the at least one first RACH resource that is mapped to the at least one SSB,

wherein the plurality of RACH resources further comprises at least one second RACH resource that remains unmapped to the at least one SSB after the positive integer number of repeated mappings of the at least one SSB over the at least one first RACH resource, and

wherein the RACH is not transmitted by the UE in the at least one second RACH resource that remains unmapped to the at least one SSB.

8. The method according to claim 1, wherein the repeated mappings of the at least one SSB over the at least one first RACH resource by the positive integer number of times within the time period comprises:

each SSB among the at least one SSB being mapped k times over the at least one first RACH resource within the time period, where k is the positive integer number of times of the repeated mappings.

9. The method according to claim 8, wherein the at least one SSB is mapped to k different groups of first RACH resources among the at least one first RACH resource.

10. The method according to claim 8, wherein the at least one second RACH resource remains unmapped to the at least one SSB after each SSB among the at least one SSB is mapped k times over the at least one first RACH resource within the time period.

11. The UE according to claim 3, wherein the repeated mappings of the at least one SSB over the at least one first RACH resource by the positive integer number of times within the time period comprises:

each SSB among the at least one SSB being mapped k times over the at least one first RACH resource within the time period, where k is the positive integer number of times of the repeated mappings.

12. The UE according to claim 11, wherein the at least one SSB is mapped to k different groups of first RACH resources among the at least one first RACH resource.

13. The UE according to claim 11, wherein the at least one second RACH resource remains unmapped to the at least one SSB after each SSB among the at least one SSB is mapped k times over the at least one first RACH resource within the time period.

14. The method according to claim 5, wherein the repeated mappings of the at least one SSB over the at least one first RACH resource by the positive integer number of times within the time period comprises:

each SSB among the at least one SSB being mapped k times over the at least one first RACH resource within the time period, where k is the positive integer number of times of the repeated mappings.

15. The method according to claim 14, wherein the at least one SSB is mapped to k different groups of first RACH resources among the at least one first RACH resource.

16. The method according to claim 14, wherein the at least one second RACH resource remains unmapped to the at least one SSB after each SSB among the at least one SSB is mapped k times over the at least one first RACH resource within the time period.

17. The BS according to claim 7, wherein the repeated mappings of the at least one SSB over the at least one first RACH resource by the positive integer number of times within the time period comprises:

each SSB among the at least one SSB being mapped k times over the at least one first RACH resource within the time period, where k is the positive integer number of times of the repeated mappings.

18. The BS according to claim 17, wherein the at least one SSB is mapped to k different groups of first RACH resources among the at least one first RACH resource.

19. The BS according to claim 17, wherein the at least one second RACH resource remains unmapped to the at least one SSB after each SSB among the at least one SSB is mapped k times over the at least one first RACH resource within the time period.