CLAIMS

1. A communication method, comprising:

receiving a system information block SIB1 from an access network device, wherein the SIB1 comprises synchronization signal block SSB configuration information and physical random access channel PRACH configuration information, the SSB configuration information indicates a quantity N of configured SSBs and an SSB configuration period, and the PRACH configuration information indicates a PRACH configuration period; and

determining a first time period based on the SSB configuration period and/or the PRACH configuration period, wherein

there is a mapping relationship between the N SSBs and M random access channel occasion RO groups in the first time period, the M RO groups appear at least once, the M RO groups comprise an RO group corresponding to each of the N SSBs and each of L PRACH repetition quantities, and mapping between the N SSBs and the M RO groups is the same in each of K consecutive first time periods; and one RO group comprises at least two ROs, all ROs in the RO group are located at different time domain positions, and all the ROs in the RO group are associated with at least one same SSB, wherein L, N, and M are integers greater than 0, and K is an integer greater than 1.

2. The method according to claim 1, wherein a length of the first time period is shortest duration in all duration that satisfies the following conditions:

there is a mapping relationship between the N SSBs and the M random access channel occasion RO groups, and the M RO groups appear at least once; and the mapping between the N SSBs and the M RO groups is the same in each of the K consecutive first time periods.

3. The method according to claim 1 or 2, wherein the determining the first time period based on the SSB configuration period and/or the PRACH configuration period comprises:

determining a second time period based on the SSB configuration period and/or the PRACH configuration period, wherein

the first time period comprises one or more second time periods, and mapping between the N SSBs and the M RO groups is performed at least once in the second time period.

4. The method according to claim 3, wherein the first time period or the second time period is Z1 times the PRACH configuration period, Z1 is a value in a first value set, and steps between values comprised in the first value set are the same, wherein Z1 is a positive integer.

5. The method according to claim 3, wherein the first time period or the second time period is Z1 times the PRACH configuration period, Z1 is a value in a first value set, and a value in the first value set is one or more of positive integers other than one or more numbers in 2^y and less

than or equal to X, wherein X is an integer greater than or equal to 16, and y is an integer greater than or equal to 0 and less than or equal to 4.

6. The method according to claim 4 or 5, wherein if a time domain resource for SSB transmission and a time domain resource for PRACH transmission overlap, and the SSB configuration period is less than or equal to the PRACH configuration period, Z1 is the value in the first value set.

7. The method according to claim 3, wherein the second time period is Z1 times the PRACH configuration period; and if a time domain resource for SSB transmission and a time domain resource for PRACH transmission overlap, and the SSB configuration period is greater than the PRACH configuration period, Z1 is a value in a second value set, and a value in the second value set is one or more numbers in 2^y, wherein y is an integer greater than or equal to 0 and less than or equal to 4.

8. The method according to claim 4 or 5, wherein a time domain resource for SSB transmission and a time domain resource for PRACH transmission do not overlap.

9. A communication method, comprising:

sending a system information block SIB1 to a terminal device, wherein the SIB1 comprises synchronization signal block SSB configuration information and physical random access channel PRACH configuration information, the SSB configuration information indicates a quantity N of configured SSBs and an SSB configuration period, and the PRACH configuration information indicates a PRACH configuration period; and

determining a first time period based on the SSB configuration period and/or the PRACH configuration period, wherein

there is a mapping relationship between the N SSBs and M random access channel occasion RO groups in the first time period, the M RO groups appear at least once, the M RO groups comprise an RO group corresponding to each of the N SSBs and each of L PRACH repetition quantities, and mapping between the N SSBs and the M RO groups is the same in each of K consecutive first time periods; and one RO group comprises at least two ROs, all ROs in the RO group are located at different time domain positions, and all the ROs in the RO group are associated with at least one same SSB, wherein L, N, and M are integers greater than 0, and K is an integer greater than 1.

10. The method according to claim 9, wherein a length of the first time period is shortest duration in all duration that satisfies the following conditions:

there is a mapping relationship between the N SSBs and the M random access channel occasion RO groups, and the M RO groups appear at least once; and the mapping between the N SSBs and the M RO groups is the same in each of the K consecutive first time periods.

11. The method according to claim 9 or 10, wherein the determining the first time period based on the SSB configuration period and/or the PRACH configuration period comprises:

determining a second time period based on the SSB configuration period and/or the PRACH configuration period, wherein

the first time period comprises one or more second time periods, and mapping between the N SSBs and the M RO groups is performed at least once in the second time period.

12. The method according to claim 11, wherein the first time period or the second time period is Z1 times the PRACH configuration period, Z1 is a value in a first value set, and steps between values comprised in the first value set are the same, wherein Z1 is a positive integer.

13. The method according to claim 11, wherein the first time period or the second time period is Z1 times the PRACH configuration period, Z1 is a value in a first value set, and a value in the first value set is one or more of positive integers other than one or more numbers in 2^y and less than or equal to X, wherein X is an integer greater than or equal to 16, and y is an integer greater than or equal to 0 and less than or equal to 4.

14. The method according to claim 12 or 13, wherein if a time domain resource for SSB transmission and a time domain resource for PRACH transmission overlap, and the SSB configuration period is less than or equal to the PRACH configuration period, Z1 is the value in the first value set.

15. The method according to claim 11, wherein the second time period is Z1 times the PRACH configuration period; and if a time domain resource for SSB transmission and a time domain resource for PRACH transmission overlap, and the SSB configuration period is greater than the PRACH configuration period, Z1 is a value in a second value set, and a value in the second value set is one or more numbers in 2^y, wherein y is an integer greater than or equal to 0 and less than or equal to 4.

16. The method according to claim 12 or 13, wherein a time domain resource for SSB transmission and a time domain resource for PRACH transmission do not overlap.

17. A communication apparatus, comprising a unit or module configured to perform the method according to any one of claims 1 to 16.

18. A communication apparatus, comprising a processor and an interface circuit, wherein the interface circuit is configured to: receive a signal from a communication apparatus other than the communication apparatus and transmit the signal to the processor, or send a signal from the processor to the communication apparatus other than the communication apparatus; and the processor is configured to implement the method according to any one of claims 1 to 16 by using a logic circuit or by executing code instructions.

19. A computer-readable storage medium, wherein the storage medium stores a computer

program or instructions; and when the computer program or the instructions are executed by a communication apparatus, the method according to any one of claims 1 to 16 is implemented.

20. A computer program product, comprising computer program code, wherein when the computer program code is run on a computer, the method according to any one of claims 1 to 16 is implemented.

21. A communication system, comprising a terminal device and an access network device, wherein the terminal device is configured to implement the method according to any one of claims 1 to 8, and the access network device is configured to implement the method according to any one of claims 9 to 16.