

CLAIMS

WHAT IS CLAIMED IS:

1. A method for determining a time-domain resource transmission position, performed by a terminal device, comprising:

performing a synchronization signal and PBCH block (SSB) measurement to determine a target SSB index;

determining a target repetition transmission occasion (TO) according to the target SSB index; and

performing small data transmission (SDT) according to the target repetition TO, wherein the target repetition TO corresponds to an N-th repetition in the SDT, and N is a positive integer;

wherein a number of repetitions is M times, wherein N is less than or equal to M, M is a positive integer, and a number of TOs is taken by subtracting 1 from a sum of a number of SSBs and the number of repetitions M.

2. The method according to claim 1, wherein the target SSB index corresponds to a target beam direction.

3. The method according to claim 1 or 2, wherein performing the synchronization signal and PBCH block (SSB) measurement to determine the target SSB index comprises:

performing signal quality measurements on a plurality of SSBs to determine a target SSB, and determining a target SSB index of the target SSB.

4. The method according to any one of claims 1 to 3, wherein SSB indexes associated with TOs corresponding to M times of repetitions are the target SSB index; or

the TOs corresponding to the M times of repetitions form one target physical uplink shared channel occasion (PO).

5. The method according to claim 4, wherein one configured grant period of the

SDT comprises a plurality of POs,

a redundancy version (RV) sequence corresponding to TOs in the target PO are {0,0,0,0}, or {0,3,0,3}, or {0,2,3,1}; or

a RV corresponding to a TO in other POs except for the target PO in a plurality of POs is RV0.

6. The method according to any one of claims 1 to 5, wherein the SDT comprises a plurality of configured grant periods, and one configured grant period comprises one PO, and one of the plurality of configured grant periods has a plurality of TOs for repetition, and other configured grant periods in the plurality of configured grant periods have one TO for repetition.

7. The method according to claim 6, wherein a same hybrid automatic repeat request (HARQ) process number (HPN) is used for the plurality of configured grant periods; or

wherein a redundancy version (RV) sequence corresponding to one configured grant period with the plurality of TOs for repetition in the plurality of configured grant periods is {0, 0, 0,0}, or {0,3,0,3}, or {0,2,3,1}; or

a RV corresponding to a plurality of configured grant periods with one TO for repetition in the plurality of configured grant periods is RV0.

8. A method for determining a time-domain resource transmission position, performed by a base station, comprising:

receiving small data transmission (SDT) of a terminal device, and determining a target repetition transmission occasion (TO), wherein the target repetition TO corresponds to an N-th repetition in the SDT, and N is a positive integer; and

determining a target SSB index according to the target repetition TO;

wherein a number of repetitions is M times, wherein N is less than or equal to M, M is a positive integer, and a number of TOs is taken by subtracting 1 from a sum of a number of SSBs and the number of repetitions M.

9. The method according to claim 8, wherein the target SSB index corresponds to

a target beam direction.

10. The method according to claim 8 or 9, wherein SSB indexes associated with TOs corresponding to M times of repetitions are the target SSB index; or

the TOs corresponding to the M times of repetitions form one target physical uplink shared channel occasion (PO).

11. The method according to any one of claims 8 to 10, wherein the SDT comprises a plurality of configured grant periods, and one configured grant period comprises one PO, and one of the plurality of configured grant periods has a plurality of TOs for repetition, and other configured grant periods in the plurality of configured grant periods have one TO for repetition;

wherein the method further comprises:

configuring or indicating for the terminal device with an L value in an L-th repetition corresponding to the TO for repetition in the other configured grant periods, where L is a positive integer.

12. The method according to claim 11, wherein a same hybrid automatic repeat request (HARQ) process number (HPN) is used for the plurality of configured grant periods; or

a redundancy version (RV) sequence corresponding to one configured grant period with the plurality of TOs for repetition in the plurality of configured grant periods is {0, 0, 0, 0}, or {0, 3, 0, 3}, or {0, 2, 3, 1}; or a RV corresponding to a plurality of configured grant periods with one TO for repetition in the plurality of configured grant periods is RV0.

13. The method according to any one of claims 8 to 12, wherein determining the target repetition TO comprises:

performing energy detection on a plurality of TOs during the N-th repetition; and

determining the target repetition TO during the N-th repetition according to a result of the energy detection on the plurality of TOs.

14. The method according to any one of claims 8 to 13, further comprising:
indicating a time gap between the plurality of TOs for repetition to the terminal device.

15. A communication device, comprising:
a processing module, configured to perform a synchronization signal and PBCH block (SSB) measurement to determine a target SSB index, wherein the target SSB index corresponds to a target beam direction; determine a target repetition transmission occasion (TO) according to the target SSB index; and perform small data transmission (SDT) according to the target repetition TO, wherein the target repetition TO is a TO corresponding to an N-th repetition in the SDT, and N is a positive integer;
wherein a number of repetitions is M times, wherein N is less than or equal to M, M is a positive integer, and a number of TOs is taken by subtracting 1 from a sum of a number of SSBs and the number of repetitions M.

16. A communication device, comprising:
a transceiver module, configured to receive small data transmission (SDT) of a terminal device, and determine a target repetition transmission occasion (TO), wherein the target repetition TO is a TO corresponding to an N-th repetition in the SDT, and N is a positive integer; and
a processing module, configured to determine a target SSB index according to the target repetition TO, wherein the target SSB index corresponds to a target beam direction;
wherein a number of repetitions is M times, wherein N is less than or equal to M, M is a positive integer, and a number of TOs is taken by subtracting 1 from a sum of a number of SSBs and the number of repetitions M.

17. A communication device, comprising a processor and a memory having a computer program stored thereon, wherein the processor is configured to execute the computer program stored in the memory, causing the device to perform the method

according to any one of claims 1 to 7; or the processor is configured to execute the computer program stored in the memory, causing the device to perform the method according to any one of claims 8 to 14.

18. A computer-readable storage medium for storing instructions, when the instructions are executed, the method according to any one of claims 1 to 7 is implemented; or, when the instructions are executed, the method according to any one of claims 8 to 14 is implemented.