

SIB4 message, the SIB4 message may carry one or more pieces of first indication information, and each piece of first indication information may be applied to all the cells at the corresponding frequency point.

[00198] In the following, examples in which the first indication information is carried in the SIB1 message, SIB2 message, SIB3 message and SIB4 message, respectively, are described below.

[00199] 1. Carrying the first indication information in the SIB1 message

[00200] As mentioned above, the SIB1 message is mainly used to describe the system information related to the cell access and the service of the home cell after the access. Accordingly, the first indication information carried in the SIB1 message can be used in the current cell access at the current frequency point and the cell service after the access.

[00201] An example of a message structure of the SIB1 message carrying the first indication information is as following.

[00202] SIB1 ::= SEQUENCE {
[00203] ...
[00204] ssb-Num INTEGER (1..Kmax),
[00205] ...
[00206] }

where ssb-Num represents the first indication information, (1..Kmax) represents a value range of the first indication information, and Kmax represents a maximum value of the first quantity.

[00207] 2. Carrying the first indication information in the SIB2 message

[00208] As mentioned above, the information in the SIB2 message can be used for the co-frequency cell reselection. Accordingly, the first indication information carried in the SIB2 message can be applied to all the cells at the frequency point corresponding to the SIB2 message. An example of the message structure of the SIB2 message carrying the first indication information is as following.

[00209] SIB2 ::= SEQUENCE {
[00210] ...
[00211] ssb-Num INTEGER (1..Kmax),

[00238] In another example, the network device may also carry a first indication information list in the SIB message, the list includes multiple pieces of first indication information, and each piece of first indication information may be applied to one or more cells.

[00239] Optionally, in this example, the SIB message may be the SIB2 message, SIB3 message, or SIB4 message.

[00240] It should be understood that when the first indication information list is carried in the SIB2 message or the SIB3 message, the first indication information list includes one or more pieces of first indication information, and each piece of first indication information may be applied to one cell or to multiple cells.

[00241] It should be understood that when the first indication information list is carried in the SIB4 message, the SIB4 message may carry one or more first indication information lists, each of the first indication information lists includes one or more piece of first indication information, and each piece of first indication information may be applied to one cell or to multiple cells.

[00242] In the following, examples in which the first indication information list is carried in the SIB2 message, SIB3 message and SIB4, respectively, are described below.

[00243] 1. Carrying the first indication information list in the SIB2 message

[00244] In a first case, the SIB2 message carries one first indication information list, and each piece of first indication information in the first indication information list is applied to one cell. An exemplary message structure in this case is as follows.

[00245]	SIB2 ::=	SEQUENCE {
[00246]	...	
[00247]	ssb-Num-list	SEQUENCE (SIZE (1..Cmax)) OF ssb-Num,
[00248]	...	
[00249]	}	
[00250]	wherein	
[00251]	ssb-Num ::=	SEQUENCE {
[00252]	...	
[00253]	physCellId	PhysCellId,

and determines whether the SSBs with the cell identifier of physCellId are QCL according to the first quantity.

[00383] In the example where the first indication information is in the first design manner mentioned above, that is, the first indication information includes the number of the SSBs actually sent by the network device and the first quantity is the number of the SSBs actually sent by the network device, an example of the message structure for carrying the first indication information by the network device in the RRC reconfiguration message configured by the measurement object is as follows.

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[00384]      MeasObjectNR ::=                               SEQUENCE {
[00385]      ...
[00386]      ssb-Num-list                               SEQUENCE (SIZE (1..Cmax)) OF
ssb-Num,
[00387]      ...
[00388]      }
[00389]      ssb-Num ::=                               SEQUENCE {
[00390]      ...
[00391]      physCellId                               PhysCellId,
[00392]      ssb-Num                               INTEGER (1..Kmax),
[00393]      ...
[00394]      }
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where ssb-Num-list represents the first indication information list which includes multiple ssb-Num structures, and Cmax represents a length of a cell list (the first indication information list). In the ssb-Num structure, physCellId represents a cell identifier, ssb-Num represents the first indication information corresponding to the cell identified as physCellId, (1..Kmax) represents a value range of the first indication information, and Kmax represents a maximum value of the first quantity.

[00395] In the example where the first indication information is in the second design manner mentioned above, that is, the first quantity indicated by the first indication information is an certain integer determined by the nth power of 2, an example of the message structure for carrying the first indication information by the network device in the

WHAT IS CLAIMED IS:

1. A synchronization signal block information processing method, applied in shared spectrum channel access, the method comprising:

obtaining, by a terminal device, identifiers of multiple SS/PBCH blocks (SSBs), wherein the identifier of the SSB is determined in accordance with demodulation reference signal (DMRS) sequences of physical broadcast channels (PBCHs), and the identifier of the SSB is used for indicating a transmission position of the SSB within a set period of time;

obtaining, by the terminal device, first indication information, wherein the first indication information is used for indicating a first quantity, and the first quantity is no more than a number of the SSBs sent by a network device within the set period of time; and

determining, by the terminal device, a first SSB in the multiple SSBs and a second SSB in the multiple SSBs are quasi-co-located (QCL) in accordance with an identifier of the first SSB, an identifier of the second SSB and the first indication information.

2. The method according to claim 1, wherein the identifier of the first SSB and the identifier of the second SSB are SSB numbers, and

wherein the determining, by the terminal device, the first SSB in the multiple SSBs and the second SSB in the multiple SSBs are quasi-co-located (QCL) in accordance with the identifier of the first SSB, the identifier of the second SSB and the first indication information comprises:

determining that the first SSB and the second SSB are QCL when a result of the SSB number of the first SSB mod the first quantity is equal to a result of the SSB number of the second SSB mod the first quantity.

3. The method according to claim 1 or 2, wherein the first indication information comprises the number of the sent SSBs, and the first quantity is the number of the sent SSBs, or

wherein the first indication information comprises n , and the first quantity is obtained by

rounding up the number of the sent SSBs up to nth power of 2, wherein n is an integer greater than or equal to 0.

4. The method according to any one of claims 1-3, wherein the first indication information is indicated by a master information block (MIB), a system information block (SIB) or a radio resource control (RRC) message.

5. The method according to claim 4, wherein one piece of the first indication information is carried in the SIB message, and the piece of the first indication information is for all cells at a frequency point corresponding to the SIB message.

6. The method according to claim 5, wherein the determining, by the terminal device, the first SSB in the multiple SSBs and the second SSB in the multiple SSBs are quasi-co-located (QCL) in accordance with the identifier of the first SSB, the identifier of the second SSB and the first indication information is for all the cells at the frequency point corresponding to the SIB message.

7. The method according to claim 4, wherein the first indication information is carried in a first indication information list of the SIB message, the first indication information list comprises multiple pieces of first indication information, and each piece of first indication information corresponds to one or more cells.

8. The method according to claim 7, wherein the determining, by the terminal device, the first SSB in the multiple SSBs and the second SSB in the multiple SSBs are quasi-co-located (QCL) in accordance with the identifier of the first SSB, the identifier of the second SSB and the first indication information is for all the cells at a frequency point corresponding to the SIB message.

9. The method according to claim 4, wherein the RRC message comprises an RRC reconfiguration message, and

wherein one piece of the first indication information is carried in the RRC reconfiguration message, and the piece of the first indication information is for all cells at a frequency point corresponding to the RRC reconfiguration message.

10. The method according to claim 9, wherein the determining, by the terminal device, the first SSB in the multiple SSBs and the second SSB in the multiple SSBs are quasi-co-located (QCL) in accordance with the identifier of the first SSB, the identifier of the second SSB and the first indication information is for all the cells at the frequency point corresponding to the RRC reconfiguration message.

11. The method according to claim 4, wherein the RRC message comprises an RRC reconfiguration message, and

wherein the first indication information is carried in a first indication information list of the RRC reconfiguration message, the first indication information list comprises multiple pieces of first indication information, and each piece of first indication information corresponds to one or more cells.

12. The method according to claim 11, wherein the determining, by the terminal device, the first SSB in the multiple SSBs and the second SSB in the multiple SSBs are quasi-co-located (QCL) in accordance with the identifier of the first SSB, the identifier of the second SSB and the first indication information is for all the cells at a frequency point corresponding to the RRC reconfiguration message

13. The method according to any one of claims 1-3, wherein the first SSB and the second SSB are within a same set period of time, or in different set periods of time.

14. The method according to any one of claims 1-3, wherein the set period of time is half of a frame period, or 2ms, 4ms, or 8ms.

15. A synchronization signal block information processing method, applied in shared spectrum channel access, the method comprising:

indicating, by a network device, first indication information to a terminal device, wherein the first indication information is used for indicating a first quantity, the first quantity is no more than a number of the SSBs sent by the network device within a set period of time; and

sending, by the network device, a first SSB and a second SSB to the terminal device so

that the terminal device determines that the first SSB and the second SSB are quasi co-located (QCL) in accordance with an identifier of the first SSB, an identifier of the second SSB and the first indication information, wherein the identifier of the SSB is determined in accordance with demodulation reference signal (DMRS) sequences of physical broadcast channels (PBCHs), and the identifier of the SSB is used for indicating a transmission position of the SSB within the set period of time.

16. The method according to claim 15, wherein the identifier of the first SSB and the identifier of the second SSB are SSB numbers, and

wherein the terminal device determining that the first SSB and the second SSB are quasi co-located (QCL) in accordance with the identifier of the first SSB, the identifier of the second SSB and the first indication information comprises:

determining that the first SSB and the second SSB are QCL when a result of the SSB number of the first SSB mod the first quantity is equal to a result of the SSB number of the second SSB mod the first quantity.

17. The method according to claim 15 or 16, wherein the first indication information comprises the number of the sent SSBs, and the first quantity is the number of the sent SSBs, or

wherein the first indication information comprises n , and the first quantity is obtained by rounding up the number of the sent SSBs up to n th power of 2, wherein n is an integer greater than or equal to 0.

18. The method according to any one of claims 15-17, wherein the first indication information is indicated by a master information block (MIB), a system information block (SIB) or a radio resource control (RRC) message.

19. The method according to claims 18, wherein one piece of the first indication information is carried in the SIB message, and the piece of the first indication information is for all cells at a frequency point corresponding to the SIB message.

20. The method according to claim 19, wherein the terminal device determining that the

first SSB and the second SSB are quasi co-located (QCL) in accordance with the identifier of the first SSB, the identifier of the second SSB and the first indication information is for all the cells at the frequency point corresponding to the SIB message.

21. The method according to claim 18, wherein the first indication information is carried in a first indication information list of the SIB message, the first indication information list comprises multiple pieces of first indication information, and each piece of first indication information corresponds to one or more cells.

22. The method according to claim 21, wherein the terminal device determining that the first SSB and the second SSB are quasi co-located (QCL) in accordance with the identifier of the first SSB, the identifier of the second SSB and the first indication information is for all the cells at a frequency point corresponding to the SIB message.

23. The method according to claim 18, wherein the RRC message comprises an RRC reconfiguration message, and

wherein one piece of the first indication information is carried in the RRC reconfiguration message, and the piece of the first indication information is for all cells at a frequency point corresponding to the RRC reconfiguration message.

24. The method according to claim 23, wherein the terminal device determining that the first SSB and the second SSB are quasi co-located (QCL) in accordance with the identifier of the first SSB, the identifier of the second SSB and the first indication information is for all the cells at the frequency point corresponding to the RRC reconfiguration message.

25. The method according to claim 18, wherein the RRC message comprises an RRC reconfiguration message, and

wherein the first indication information is carried in a first indication information list of the RRC reconfiguration message, the first indication information list comprises multiple pieces of first indication information, and each piece of first indication information corresponds to one or more cells.

26. The method according to claim 25, wherein the terminal device determining that the

first SSB and the second SSB are quasi co-located (QCL) in accordance with the identifier of the first SSB, the identifier of the second SSB and the first indication information is for all the cells at a frequency point corresponding to the RRC reconfiguration message

27. The method according to any one of claims 15-17, wherein the first SSB and the second SSB are within a same set period of time, or in different set periods of time.

28. The method according to any one of claims 15-17, wherein the set period of time is half of a frame period, or 2ms, 4ms, or 8ms.

29. A synchronization signal block information processing device, applied in shared spectrum channel access, the device comprising:

a processing module (601) configured to:

obtain identifiers of multiple SS/PBCH blocks (SSBs), wherein the identifier of SSB is determined in accordance with demodulation reference signal (DMRS) sequences of physical broadcast channels (PBCHs), and the identifier of the SSB is used for indicating a transmission position of the SSB within a set period of time; and

obtain first indication information, wherein the first indication information is used for indicating a first quantity, and the first quantity is no more than a number of the SSBs sent by a network device within the set period of time; and

determine that a first SSB in the multiple SSBs and a second SSB in the multiple SSBs are quasi-co-located (QCL) in accordance with an identifier of the first SSB, an identifier of the second SSB and the first indication information.

30. A synchronization signal block information processing device, applied in shared spectrum channel access, the device comprising a processing module (601) and a sending module (602),

wherein the processing module is configured to indicate first indication information to a terminal device, wherein the first indication information is used for indicating a first quantity, the first quantity is no more than a number of the SSBs sent by the network device within a set period of time, and

the sending module is configured to send a first SSB and a second SSB to the terminal device, so that the terminal device determines that the first SSB and the second SSB are quasi co-located (QCL) in accordance with an identifier of the first SSB, an identifier of the second SSB and the first indication information, wherein the identifier of the SSB is determined in accordance with demodulation reference signal (DMRS) sequences of physical broadcast channels (PBCHs), and the identifier of the SSB is used for indicating a transmission position of the SSB within the set period of time.