

determine that the fourth SCI includes the second information. For example, if the third terminal apparatus receives the third SCI and the fourth SCI, and can identify the second field, the third terminal apparatus can determine that the fourth SCI includes the second information. In this case, the third terminal apparatus obtains the second information from the fourth SCI when parsing the fourth SCI. In this manner, the third terminal apparatus can identify a format of the fourth SCI, to correctly obtain the second information.

[0023] In an optional implementation, the first information further includes information for indicating a data packet size of the first data, and the data packet size of the first data is for determining the second time-frequency resource.

[0024] Because the second information may be for determining the time-frequency resource for sending data to the third terminal apparatus, that is, the second information may indicate a corresponding time-frequency resource, the third terminal apparatus may also determine the second information based on the sensing result of the third terminal apparatus. When performing resource exclusion based on the sensing result, the third terminal apparatus may perform resource exclusion based on the data packet size of the first data. Therefore, the first terminal apparatus may notify the third terminal apparatus of the information about the data packet size of the first data, so that the third terminal apparatus excludes a resource. For example, the data packet size of the first data may include a size of a subchannel occupied by the first data, that is, a quantity of subchannels occupied by the first data, or the data packet size of the first data may include a transport block size corresponding to the first data, or the data packet size of the first data may further include other information.

[0025] In an optional implementation, the third time-frequency resource is the second time-frequency resource, and the sending first data to the third terminal apparatus on the third time-frequency resource includes:

sending the first data to the third terminal apparatus on the second time-frequency resource.

[0026] For example, if the first terminal apparatus determines, based on detection of the SCI from the at least one second terminal apparatus, that the second time-frequency resource is not excluded from use, that is, the second time-frequency resource is also an available time-frequency resource for the first terminal apparatus, the first terminal apparatus may determine to send data on the second time-frequency resource. In this case, the second time-frequency resource and the

at least one second terminal apparatus to determine the first time-frequency resource, and is further configured to detect the sidelink control information from the at least one second terminal apparatus to determine a seventh time-frequency resource, where the seventh time-frequency resource is a time-frequency resource earliest in time domain in available time-frequency resources determined based on the detected sidelink control information.

[0067] The transceiver module is configured to send the first information to the third terminal apparatus in the following manner: sending the first information to the third terminal apparatus on the seventh time-frequency resource.

[0068] In an optional implementation, the second time-frequency resource includes a time-frequency resource available for sending data to the third terminal apparatus; or
the second time-frequency resource includes the time-frequency resource unavailable for sending data to the third terminal apparatus.

[0069] For technical effects brought by the third aspect or the optional implementations, refer to the descriptions of the technical effects brought by the first aspect or the corresponding implementations.

[0070] According to a fourth aspect, a communication apparatus is provided. For example, the communication apparatus is the second communication apparatus described above. The second communication apparatus is configured to perform the method according to any one of the second aspect or the possible implementations. Specifically, the second communication apparatus may include modules configured to perform the method according to any one of the second aspect or the possible implementations, for example, include a processing module and a transceiver module. For example, the transceiver module may include a sending module and a receiving module. The sending module and the receiving module may be different functional modules, or may be a same functional module but can implement different functions. For example, the second communication apparatus is a communication device, or is a chip or another component disposed in the communication device. For example, the communication device is a terminal device. The following uses an example in which the second communication apparatus is a third terminal apparatus. The third terminal apparatus may be a terminal device, or may be a chip or another component disposed in the terminal device. For example, the transceiver module may alternatively be implemented as a transceiver, and the processing module may alternatively be implemented as a processor. Alternatively, the sending module may be implemented as a transmitter, and the

CLAIMS

What is claimed is:

1. A communication method, comprising:

detecting sidelink control information (SCI) from at least one second terminal apparatus to
5 determine a first time-frequency resource, wherein the at least one second terminal apparatus
comprises a third terminal apparatus, and the first time-frequency resource comprises a time-
frequency resource unavailable for sending data to the third terminal apparatus;

sending first information to the third terminal apparatus, wherein the first information is for
triggering determining of second information;

10 receiving the second information from the third terminal apparatus, wherein the second
information indicates a second time-frequency resource, and the second time-frequency resource
is for determining a time-frequency resource for sending data to the third terminal apparatus;

determining a third time-frequency resource based on the first time-frequency resource and
the second time-frequency resource; and

15 sending first data to the third terminal apparatus on the third time-frequency resource.

2. The method according to claim 1, wherein the sending first information to the third terminal
apparatus comprises:

sending first control information to the third terminal apparatus, wherein the first control
information comprises first SCI and second SCI, the first SCI is 1st-stage SCI, the second SCI is
20 2nd-stage SCI, and the second SCI comprises the first information.

3. The method according to claim 2, wherein the first information further indicates a fourth
time-frequency resource, and the fourth time-frequency resource is for determining a time-
frequency resource for sending the second information.

4. The method according to claim 2, wherein the first SCI indicates a fifth time-frequency
25 resource, and the fifth time-frequency resource is for sending the second information.

5. The method according to any one of claims 2 to 4, wherein the first SCI further comprises
a first field, and the first field indicates that the second SCI comprises the first information.

6. The method according to any one of claims 2 to 5, wherein the method further comprises:
retransmitting the first information to the third terminal apparatus on a sixth time-frequency
30 resource, wherein the sixth time-frequency resource is indicated by the first SCI.

7. The method according to any one of claims 1 to 6, wherein the receiving the second information from the third terminal apparatus comprises:

receiving second control information from the third terminal apparatus, wherein the second control information comprises third SCI and fourth SCI, the third SCI is 1st-stage SCI, the fourth SCI is 2nd-stage SCI, and the fourth SCI comprises the second information.

8. The method according to claim 7, wherein the third SCI further comprises a second field, and the second field indicates that the fourth SCI comprises the second information.

9. The method according to any one of claims 1 to 8, wherein the first information further comprises information for indicating a data packet size of the first data, and the data packet size of the first data is for determining the second time-frequency resource.

10. The method according to any one of claims 1 to 9, wherein the third time-frequency resource is the second time-frequency resource, and the sending first data to the third terminal apparatus on the third time-frequency resource comprises:

sending the first data to the third terminal apparatus on the second time-frequency resource.

11. The method according to any one of claims 1 to 10, wherein

the detecting sidelink control information from at least one second terminal apparatus to determine a first time-frequency resource further comprises:

detecting the sidelink control information from the at least one second terminal apparatus to determine a seventh time-frequency resource, wherein the seventh time-frequency resource is a time-frequency resource earliest in time domain in available time-frequency resources determined based on the detected sidelink control information; and

the sending first information to the third terminal apparatus comprises:

sending the first information to the third terminal apparatus on the seventh time-frequency resource.

12. The method according to any one of claims 1 to 11, wherein

the second time-frequency resource comprises a time-frequency resource available for sending data to the third terminal apparatus; or

the second time-frequency resource comprises the time-frequency resource unavailable for sending data to the third terminal apparatus.

13. A communication method, comprising:

receiving first information from a first terminal apparatus, wherein the first information is for

triggering determining of second information;

detecting sidelink control information (SCI) from at least one fourth terminal apparatus to determine a second time-frequency resource, wherein the at least one fourth terminal apparatus comprises the first terminal apparatus, and the second time-frequency resource is for determining a time-frequency resource for the first terminal apparatus to send data;

sending the second information to the first terminal apparatus, wherein the second information indicates the second time-frequency resource; and

receiving first data from the first terminal apparatus.

14. The method according to claim 13, wherein the receiving first information from a first terminal apparatus comprises:

receiving first control information from the first terminal apparatus, wherein the first control information comprises first SCI and second SCI, the first SCI is 1st-stage SCI, the second SCI is 2nd-stage SCI, and the second SCI comprises the first information.

15. The method according to claim 14, wherein the first information further indicates a fourth time-frequency resource, and the fourth time-frequency resource is for determining a time-frequency resource for sending the second information.

16. The method according to claim 15, wherein the method further comprises:

determining, based on detection of the sidelink control information from the at least one fourth terminal apparatus, that the fourth time-frequency resource is not excluded from use, and determining to send the second information on the fourth time-frequency resource; and

if it is determined, based on detection of the sidelink control information from the at least one fourth terminal apparatus, that the fourth time-frequency resource is excluded from use, when a priority of second data is higher than a priority threshold, determining to send the second information on a time-frequency resource that is not excluded from use; otherwise, determining to send the second information on the fourth time-frequency resource; or

if it is determined, based on detection of the sidelink control information from the at least one fourth terminal apparatus, that the fourth time-frequency resource is excluded from use, when a priority of second data is higher than a priority of the first data, determining to send the second information on a time-frequency resource that is not excluded from use; otherwise, determining to send the second information on the fourth time-frequency resource, wherein

the second data is data that is to be sent on the fourth time-frequency resource by a fourth

terminal apparatus reserving the fourth time-frequency resource.

17. The method according to claim 14, wherein the first SCI indicates a fifth time-frequency resource, and the fifth time-frequency resource is for sending the second information.

18. The method according to claim 17, wherein the method further comprises:

5 determining to send the second information on the fifth time-frequency resource.

19. The method according to any one of claims 14 to 18, wherein the first SCI further comprises a first field, and the first field indicates that the second SCI comprises the first information.

10 20. The method according to any one of claims 14 to 19, wherein the method further comprises:

receiving, on a sixth time-frequency resource, the first information retransmitted from the first terminal apparatus, wherein the sixth time-frequency resource is indicated by the first SCI.

21. The method according to any one of claims 13 to 20, wherein the sending the second information to the first terminal apparatus comprises:

15 sending second control information to the first terminal apparatus, wherein the second control information comprises third SCI and fourth SCI, the third SCI is 1st-stage SCI, the fourth SCI is 2nd-stage SCI, and the fourth SCI comprises the second information.

22. The method according to claim 21, wherein the third SCI further comprises a second field, and the second field indicates that the fourth SCI comprises the second information.

20 23. The method according to any one of claims 13 to 22, wherein the first information further comprises information for indicating a data packet size of the first data, and the detecting sidelink control information from at least one first terminal apparatus to determine a second time-frequency resource comprises:

25 determining the second time-frequency resource based on a detection result and the data packet size of the first data.

24. The method according to any one of claims 13 to 23, wherein

the second time-frequency resource comprises a time-frequency resource available for sending data to a third terminal apparatus; or

30 the second time-frequency resource comprises a time-frequency resource unavailable for sending data to a third terminal apparatus.

25. The method according to any one of claims 13 to 24, wherein the receiving first data from

the first terminal apparatus comprises:

receiving the first data from the first terminal apparatus on a third time-frequency resource, wherein the third time-frequency resource is determined based on a first time-frequency resource and the second time-frequency resource, and the first time-frequency resource is determined by the first terminal apparatus by detecting sidelink control information from at least one second terminal apparatus.

26. A terminal apparatus, comprising:

a processing module, configured to detect sidelink control information (SCI) from at least one second terminal apparatus to determine a first time-frequency resource, wherein the at least one second terminal apparatus comprises a third terminal apparatus, and the first time-frequency resource comprises a time-frequency resource unavailable for sending data to the third terminal apparatus; and

a transceiver module, configured to send first information to the third terminal apparatus, wherein the first information is for triggering determining of second information, wherein

the transceiver module is further configured to receive the second information from the third terminal apparatus, wherein the second information indicates a second time-frequency resource, and the second time-frequency resource is for determining a time-frequency resource for sending data to the third terminal apparatus;

the processing module is further configured to determine a third time-frequency resource based on the first time-frequency resource and the second time-frequency resource; and

the transceiver module is further configured to send first data to the third terminal apparatus on the third time-frequency resource.

27. The terminal apparatus according to claim 26, wherein the transceiver module is configured to send the first information to the third terminal apparatus in the following manner:

sending first control information to the third terminal apparatus, wherein the first control information comprises first SCI and second SCI, the first SCI is 1st-stage SCI, the second SCI is 2nd-stage SCI, and the second SCI comprises the first information.

28. The terminal apparatus according to claim 27, wherein the second SCI further indicates a fourth time-frequency resource, and the fourth time-frequency resource is for determining a time-frequency resource for sending the second information.

29. The terminal apparatus according to claim 27, wherein the first SCI indicates a fifth time-

frequency resource, and the fifth time-frequency resource is for sending the second information.

30. The terminal apparatus according to any one of claims 27 to 29, wherein the first SCI further comprises a first field, and the first field indicates that the second SCI comprises the first information.

5 31. The terminal apparatus according to any one of claims 27 to 30, wherein the transceiver module is further configured to retransmit the first information to the third terminal apparatus on a sixth time-frequency resource, wherein the sixth time-frequency resource is indicated by the first SCI.

10 32. The terminal apparatus according to any one of claims 26 to 31, wherein the transceiver module is configured to receive the second information from the third terminal apparatus in the following manner:

receiving second control information from the third terminal apparatus, wherein the second control information comprises third SCI and fourth SCI, the third SCI is 1st-stage SCI, the fourth SCI is 2nd-stage SCI, and the fourth SCI comprises the second information.

15 33. The terminal apparatus according to claim 32, wherein the third SCI further comprises a second field, and the second field indicates that the fourth SCI comprises the second information.

34. The terminal apparatus according to any one of claims 26 to 33, wherein the first information further comprises information for indicating a data packet size of the first data, and the data packet size of the first data is for determining the second time-frequency resource.

20 35. The terminal apparatus according to any one of claims 26 to 34, wherein the third time-frequency resource is the second time-frequency resource, and the transceiver module is configured to send the first data to the third terminal apparatus on the third time-frequency resource in the following manner:

sending the first data to the third terminal apparatus on the second time-frequency resource.

25 36. The terminal apparatus according to any one of claims 26 to 35, wherein
the processing module is configured to detect the sidelink control information from the at least one second terminal apparatus to determine the first time-frequency resource, and is further configured to detect the sidelink control information from the at least one second terminal apparatus to determine a seventh time-frequency resource, wherein the seventh time-frequency
30 resource is a time-frequency resource earliest in time domain in available time-frequency resources determined based on the detected sidelink control information; and

the transceiver module is configured to send the first information to the third terminal apparatus in the following manner: sending the first information to the third terminal apparatus on the seventh time-frequency resource.

37. The terminal apparatus according to any one of claims 26 to 36, wherein

5 the second time-frequency resource comprises a time-frequency resource available for sending data to the third terminal apparatus; or

the second time-frequency resource comprises the time-frequency resource unavailable for sending data to the third terminal apparatus.

38. A terminal apparatus, comprising:

10 a transceiver module, configured to receive first information from a first terminal apparatus, wherein the first information is for triggering determining of second information; and

a processing module, configured to detect sidelink control information (SCI) from at least one fourth terminal apparatus to determine a second time-frequency resource, wherein the at least one fourth terminal apparatus comprises the first terminal apparatus, and the second time-
15 frequency resource is for determining a time-frequency resource for sending data to the terminal apparatus, wherein

the transceiver module is further configured to send the second information to the first terminal apparatus, wherein the second information indicates the second time-frequency resource; and

20 the transceiver module is further configured to receive first data from the first terminal apparatus.

39. The terminal apparatus according to claim 38, wherein the transceiver module is configured to receive the first information from the first terminal apparatus in the following manner:

25 receiving first control information from the first terminal apparatus, wherein the first control information comprises first SCI and second SCI, the first SCI is 1st-stage SCI, the second SCI is 2nd-stage SCI, and the second SCI comprises the first information.

40. The terminal apparatus according to claim 39, wherein the second SCI further indicates a fourth time-frequency resource, and the fourth time-frequency resource is for determining a time-
30 frequency resource for sending the second information.

41. The terminal apparatus according to claim 40, wherein the processing module is further

configured to:

determine, based on detection of the sidelink control information from the at least one fourth terminal apparatus, that the fourth time-frequency resource is not excluded from use, and determine to send the second information on the fourth time-frequency resource; and

5 if it is determined, based on detection of the sidelink control information from the at least one fourth terminal apparatus, that the fourth time-frequency resource is excluded from use, when a priority of second data is higher than a priority threshold, determine to send the second information on a time-frequency resource that is not excluded from use; otherwise, determine to send the second information on the fourth time-frequency resource; or

10 if it is determined, based on detection of the sidelink control information from the at least one fourth terminal apparatus, that the fourth time-frequency resource is excluded from use, when a priority of second data is higher than a priority of the first data, determine to send the second information on a time-frequency resource that is not excluded from use; otherwise, determine to send the second information on the fourth time-frequency resource, wherein

15 the second data is data that is to be sent on the fourth time-frequency resource by a fourth terminal apparatus reserving the fourth time-frequency resource.

42. The terminal apparatus according to claim 39, wherein the first SCI indicates a fifth time-frequency resource, and the fifth time-frequency resource is for sending the second information.

43. The terminal apparatus according to claim 42, wherein the processing module is further
20 configured to determine to send the second information on the fifth time-frequency resource.

44. The terminal apparatus according to any one of claims 39 to 43, wherein the first SCI further comprises a first field, and the first field indicates that the second SCI comprises the first information.

45. The terminal apparatus according to any one of claims 39 to 44, wherein the transceiver
25 module is further configured to receive, on a sixth time-frequency resource, the first information retransmitted from the first terminal apparatus, wherein the sixth time-frequency resource is indicated by the first SCI.

46. The terminal apparatus according to any one of claims 38 to 45, wherein the transceiver
30 module is configured to send the second information to the first terminal apparatus in the following manner:

sending second control information to the first terminal apparatus, wherein the second control

information comprises third SCI and fourth SCI, the third SCI is 1st-stage SCI, the fourth SCI is 2nd-stage SCI, and the fourth SCI comprises the second information.

47. The terminal apparatus according to claim 46, wherein the third SCI further comprises a second field, and the second field indicates that the fourth SCI comprises the second information.

5 48. The terminal apparatus according to any one of claims 38 to 47, wherein the first information further comprises information for indicating a data packet size of the first data, and the processing module is configured to detect sidelink control information from at least one first terminal apparatus in the following manner to determine the second time-frequency resource:

10 determining the second time-frequency resource based on a detection result and the data packet size of the first data.

49. The terminal apparatus according to any one of claims 38 to 48, wherein the second time-frequency resource comprises a time-frequency resource available for sending data to the terminal apparatus; or

15 the second time-frequency resource comprises a time-frequency resource unavailable for sending data to the terminal apparatus.

50. The terminal apparatus according to any one of claims 38 to 49, wherein the transceiver module is configured to receive the first data from the first terminal apparatus in the following manner:

20 receiving the first data from the first terminal apparatus on a third time-frequency resource, wherein the third time-frequency resource is determined based on a first time-frequency resource and the second time-frequency resource, and the first time-frequency resource is determined by the first terminal apparatus by detecting sidelink control information from at least one second terminal apparatus.

25 51. A terminal apparatus, comprising a processor, wherein the processor is coupled to at least one memory, and the processor is configured to read a computer program stored in the at least one memory, to perform the method according to any one of claims 1 to 12 or the method according to any one of claims 13 to 25.

30 52. A computer-readable storage medium, wherein the computer-readable storage medium is configured to store a computer program; and when the computer program is run on a computer, the computer is enabled to perform the method according to any one of claims 1 to 12, or the computer is enabled to perform the method according to any one of claims 13 to 25.

53. A chip, comprising a processor and a communication interface, wherein the processor is configured to read instructions to perform the method according to any one of claims 1 to 12 or the method according to any one of claims 13 to 25.

54. A communication system, comprising the terminal apparatus according to any one of
5 claims 26 to 37 and the terminal apparatus according to any one of claims 38 to 50.