

WHAT IS CLAIMED IS:

1. A method for determining random access occasion (RO) resource information, performed by a terminal, comprising:

determining RO configuration information for an initiated random access;

determining, based on at least one of one or more features supported by the terminal or an indication from a network device, at least one piece of RO resource information from RO resource information for a 4-step Contention-Based Random Access (CBRA) introduced by at least one of a legacy release or a Release 17 (R17), wherein separate RO resource information configured in the RO configuration information is absent for the terminal; and

determining the at least one piece of RO resource information as RO resource information for the initiated random access, wherein the initiated random access comprises a 4-step Contention-Free Random Access (CFRA),

wherein determining, based on at least one of one or more features supported by the terminal or the indication from the network device, at least one piece of RO resource information from RO resource information for the 4-step CBRA introduced by at least one of the legacy release or the R17 comprises:

in response to receiving an indication from a network device for instructing to determine the RO resource information for the 4-step CFRA based on the RO resource information for the 4-step CBRA introduced by the R17, determining RO configuration information in a subset or all of multiple pieces of RO resource information for the 4-step CBRA introduced by the R17 as RO configuration information in the RO resource information for the initiated 4-step CFRA; or

in response to not receiving any indication from a network device for instructing to determine the RO resource information for the 4-step CFRA based on the RO resource information for the 4-step CBRA introduced by the R17, determining RO configuration information in the RO resource information for the initiated 4-step CFRA based on RO configuration information in the RO resource information for the 4-step CBRA introduced by the legacy release.

2. The method of claim 1, being characterized in that, determining, based on the one or more features supported by the terminal, the at least one piece of RO resource information from the RO resource information for the 4-step CBRA introduced by at least one of the legacy release or the R17 comprises:

determining RO resource information corresponding to the features supported by the terminal from multiple pieces of RO resource information for the 4-step CBRA introduced by the R17.

3. The method of claim 1 or 2, wherein the at least one of the legacy release or the R17 is determined based on an indication from a network device or based on a protocol; and/or

wherein the legacy release comprises at least one of: a Release 15 (R15) or a Release 16 (R16)

4. The method of any one of claims 1 to 3, wherein the 4-step CFRA is initiated by at least one of:

a Physical Downlink Control Channel (PDCCH) order;

a System Information (SI) request; or

a Handover command.

5. The method of claim 4, wherein determining the at least one piece of RO resource information from the RO resource information for the 4-step CBRA introduced by at least one of the legacy release or the R17 comprises:

determining the RO resource information for the 4-step CBRA introduced by the at least one legacy release or the R17 as the RO resource information for the initiated 4-step CFRA.

6. The method of claim 5, wherein determining the RO resource information for the 4-step CBRA introduced by the at least one legacy release or the R17 as the RO resource information for the initiated 4-step CFRA comprises at least one of:

determining n RO resource information for the 4-step CBRA introduced by the legacy release as the RO resource information for the initiated 4-step CFRA; or

determining a subset or all of multiple pieces of RO resource information for the 4-step CBRA introduced by the R17 as the RO resource information for the initiated 4-step CFRA.

7. The method of claim 1, wherein the one or more features supported by the terminal comprising at least one of:

a reduced capability (RedCap) feature, a slicing feature, a small data transmission (SDT) feature or a coverage enhancement (CE) feature.

8. The method of claim 7, wherein determining the subset or all of the multiple pieces of RO resource information for the 4-step CBRA introduced by the R17 as the RO resource information for the initiated 4-step CFRA comprises:

in response to the terminal supporting to determine the RO resource information for the initiated

4-step CFRA based on the RO resource information for the 4-step CBRA introduced by the R17, determining the subset or all of the multiple pieces of RO resource information for the 4-step CBRA introduced by the R17 as the RO resource information for the initiated 4-step CFRA; and

wherein the method further comprises:

in response to the terminal not supporting to determine the RO resource information for the 4-step CFRA based on the RO resource information for the 4-step CBRA introduced by the R17, determining the RO resource information for the initiated 4-step CFRA based on the RO resource information for the 4-step CBRA introduced by the legacy release.

9. The method of claim 6, wherein determining the subset or all of the multiple pieces of RO resource information for the 4-step CBRA introduced by the R17 as the RO resource information for the initiated 4-step CFRA comprises:

determining, based on a terminal implementation, the subset or all of the multiple pieces of RO resource information for the 4-step CBRA introduced by the R17 as the RO resource information for the initiated 4-step CFRA.

10. The method of any one of claims 4 to 9, wherein the 4-step CFRA is initiated by at least one of: the System Information (SI) request or the Handover command; and wherein the method further comprises:

determining a correspondence between a Synchronization Signal Block (SSB) and an RO in the RO resource information for the initiated 4-step CFRA.

11. The method of claim 10, wherein determining the correspondence between the SSB and the RO in the RO resource information for the initiated 4-step CFRA comprises:

determining the correspondence between the SSB and the RO in the RO resource information for the 4-step CBRA introduced by the at least one of the legacy release or the R17 as the correspondence between the SSB and the RO in the RO resource information for the initiated 4-step CFRA.

12. A method for indicating random access occasion (RO) resource information, performed by a network device, comprising:

determining RO configuration information or a random access initiated by a terminal;

determining, based on at least one feature supported by the terminal, or instructing the terminal to determine, at least one piece of RO resource information from RO resource information for a 4-

step Contention-Based Random Access (CBRA) introduced by at least one of a legacy release or a Release 17 (R17), wherein separate RO resource information configured in the RO configuration information is absent for the terminal; and

determining the at least one piece of RO resource information as RO resource information for the initiated random access, wherein the initiated random access comprises a 4-step Contention-Free Random Access (CFRA);

wherein determining, based on at least one feature supported by the terminal, or instructing the terminal to determine, at least one piece of RO resource information from RO resource information for the 4-step CBRA introduced by at least one of the legacy release or the R17 comprises:

sending an indication to the terminal for instructing to determine the RO resource information for the 4-step CFRA based on the RO resource information for the 4-step CBRA introduced by the R17, so as to instruct the terminal to determine RO configuration information in a subset or all of multiple pieces of RO resource information for the 4-step CBRA introduced by the R17 as RO configuration information in the RO resource information for the initiated 4-step CFRA; or

withdrawing sending an indication to the terminal for instructing to determine the RO resource information for the 4-step CFRA based on the RO resource information for the 4-step CBRA introduced by the R17, so as to enable the terminal to determine RO configuration information in the RO resource information for the initiated 4-step CFRA based on RO configuration information in the RO resource information for the 4-step CBRA introduced by the legacy release.

13. The method of claim 12, wherein determining, based on at least one feature of one or more features supported by the terminal, the at least one piece of RO resource information from RO resource information for a 4-step CBRA introduced by at least one of the legacy release or the Release 17 (R17) comprises:

determining RO resource information corresponding to the features supported by the terminal from multiple pieces of RO resource information for the 4-step CBRA introduced by the R17.

14. The method of claim 12 or 13, wherein the legacy release comprises at least one of:
a Release 15 (R15) or a Release 16 (R16).

15. The method of any one of claims 12 to 14, wherein the 4-step CFRA is initiated by at least one of:

a Physical Downlink Control Channel (PDCCH) order;

a System Information (SI) request; or
a Handover command.

16. The method of claim 15, wherein instructing the terminal to determine the at least one piece of RO resource information from RO resource information for the 4-step CBRA introduced by at least one of the legacy release or the R17 comprises:

instructing the terminal to determine the RO resource information for the 4-step CBRA introduced by the at least one of the legacy release or the R17 as the RO resource information for the initiated 4-step CFRA.

17. The method of claim 16, wherein instructing the terminal to determine the at least one piece of RO resource information from RO resource information for the 4-step CBRA introduced by at least one of the legacy release or the R17 comprises at least one of:

instructing the terminal to determine the RO resource information for the 4-step CBRA introduced by the legacy release as the RO resource information for the initiated 4-step CFRA; or

instructing the terminal to determine a subset or all of multiple pieces of RO resource information for the 4-step CBRA introduced by the R17 as the RO resource information for the initiated 4-step CFRA.

18. The method of claim 17, wherein instructing the terminal to determine the subset or all of the multiple pieces of RO resource information for the 4-step CBRA introduced by the R17 as the RO resource information for the initiated 4-step CFRA comprises:

in response to the terminal supporting to determine the RO resource information for the 4-step CFRA based on the RO resource information for the 4-step CBRA introduced by the R17, instructing the terminal to determine the subset or all of the multiple pieces of RO resource information for the 4-step CBRA introduced by the R17 as in the RO resource information for the initiated 4-step CFRA; and

wherein the method further comprises:

in response to the terminal not supporting to determine the RO resource information for the 4-step CFRA based on the RO resource information for the 4-step CBRA introduced by the R17, instructing the terminal to determine the RO resource information for the initiated 4-step CFRA based on RO resource information for the 4-step CBRA introduced by the legacy release.

19. The method of any one of claims 15 to 18, wherein the 4-step CFRA is initiated by at least

one of: the System Information (SI) request or the Handover command; and the method further comprises:

instructing the terminal to determine, in a specified way, a correspondence between a Synchronization Signal Block (SSB) and a RO in the RO resource information for the initiated 4-step CFRA.

20. A communication device, comprising:

a processor; and

a memory for storing a computer program;

wherein when the computer program is executed by a processor, the method any one of claims 1 to 19 is performed.