free random access procedure, the terminal device may determine the target channel access type according to first indication information, where the first indication information is sent to the terminal device by a network device by using physical layer signaling.

The first indication information may directly indicate the target channel access type, or may indicate a service priority or the like, so that the terminal device determines the target channel access type according to the service priority or the like, or may indicate a channel access priority or the like, so that the terminal device determines, according to the channel access priority or the like, a channel access parameter corresponding to the target channel access type.

In addition, the target channel access type indicated by the first indication information may be determined by the network device according to a priority of a service triggering the PRACH to be sent, or according to whether the target time domain resource belongs to a shared COT.

The first indication information may be further used for determining at least one of the following information: a start location of the PRACH, an end location of the PRACH, a transmit beam identifier corresponding to the PRACH, and a receive beam identifier corresponding to the PRACH, in addition to indicating the target channel access type and the like.

Optionally, the transmit beam identifier corresponding to the PRACH and/or the receive beam identifier corresponding to the PRACH are/is determined according to a beam direction of a synchronization signal block (SSB) associated with a PRACH resource (for example, the target time domain resource). The SSB includes A primary synchronization signal (PSS), a secondary synchronization signal (SSS), and a physical broadcast channel (PBCH). When the random access procedure corresponding to the PRACH is the contention-based random access procedure, the terminal device may determine the target channel access type in the following manner: determining the target channel access type according to a standard specification, or determining the target channel access type according to the a configuration by a network device, or determining the target channel access type according to the target time domain resource.

The determining, by the terminal device, the target channel access type according to

CLAIMS

What is claimed is:

1. A method for performing physical random access procedure, applied in shared spectrum, comprising:

obtaining, by a terminal device from a network device, a target channel access type, wherein the target channel access type comprises a Type 1 channel access or a Type 2 channel access; and

determining, by the terminal device according to the target channel access type, an availability of a target time domain resource, wherein the target time domain resource is a time domain resource used by the terminal device to perform transmission of a physical random access channel (PRACH),

wherein the obtaining, by the terminal device, the target channel access type comprises: if the target time domain resource belongs to a shared channel occupancy time, obtaining, by the terminal device the target channel access type comprising the Type 2 channel access; or if the target time domain resource does not belong to a shared channel occupancy time, obtaining, by the terminal device the target channel access type comprising the Type 1 channel access, and

wherein the shared channel occupancy time is shared by the network device.

2. The method according to claim 1, wherein the target channel access type obtained by the terminal device according to a specification or the target time domain resource comprises the Type 1 channel access.

3. The method according to claim 2, wherein the Type 1 channel access has a smallest value of channel access priority class.

4. The method according to claim 3, wherein if the target channel access type obtained by the terminal device according to a specification is the Type 1 channel access that has the smallest value of channel access priority class, the method further comprises:

if the target time domain resource belongs to a shared channel occupancy time, switching the target channel access type from the Type 1 channel access that has the smallest value of channel access priority class to the Type 2 channel access.

5. The method according to claim 4, wherein if the target time domain resource does not belong to a shared channel occupancy time, determining, by the terminal device, the target channel access type is the Type 1 channel access that has the smallest value of channel access priority class.

6. The method according to claim 1, wherein the terminal device determining the availability of a target time domain resource according to the target channel access type comprises:

if the target channel access type is the Type 1 channel access, the terminal device performs channel sensing based on a contention window with parameters corresponding to Type 1 channel access that has the smallest value of channel access priority class; or

if the target channel access type is the Type 2 channel access, the terminal device performs channel sensing with a deterministic sensing duration of 25 microseconds.

7. The method according to claim 1, wherein the random access procedure corresponding to the PRACH comprises a contention-based random access procedure and a contention-free random access procedure.

8. The method according to claim 1, wherein the random access procedure is a contention-free random access procedure, and the method further comprises determining, by the terminal device, the target channel access type according to first indication information, wherein the first indication information is sent by a network device via signaling of a physical layer.

9. A method for random access, applied in shared spectrum, comprising:

sending, by a network device, first indication information to a terminal device via signaling of a physical layer when a random access procedure corresponding to a physical random access channel (PRACH) is a contention-free random access procedure, to indicate the terminal device to determine, according to the first indication information, a target channel access type for the terminal device to transmit the PRACH on a carrier of a shared spectrum,

wherein indicating the terminal device to determine, according to the first indication information, a target channel access type comprises: if the target time domain resource belongs to a shared channel occupancy time, indicating the terminal device to obtain the target channel access type comprising the Type 2 channel access; or if the target time domain resource does not belong to a shared channel occupancy time, indicating the terminal device to obtain the target channel access type comprising the Type 1 channel access, and

wherein the shared channel occupancy time is shared by the network device.

10. The method according to claim 9, wherein

the target channel access type indicated by the first indication information is determined by the network device according to a priority of a service triggering the PRACH to be sent; or

the target channel access type indicated by the first indication information is determined by the network device according to whether a target time domain resource belongs to a shared channel occupancy time (COT).

11. An apparatus for random access, applied in shared spectrum, comprising a processor and a memory, wherein the memory is configured to store a computer program, and the processor is configured to invoke and run the computer program stored in the memory, to perform:

obtaining, by a terminal device, a target channel access type, wherein the target channel access type comprises a Type 1 channel access or a Type 2 channel access; and

determining, by the terminal device according to the target channel access type, an availability of a target time domain resource, wherein the target time domain resource is a time domain resource used by the terminal device to perform transmission of a physical random access channel (PRACH),

wherein obtaining, by the terminal device, the target channel access type comprises: if the target time domain resource belongs to a shared channel occupancy time, obtaining, by the terminal device the target channel access type comprising the Type 2 channel access; or if the target time domain resource does not belong to a shared channel occupancy time, obtaining, by the terminal device the target channel access type comprising the Type 1 channel access, and

wherein the shared channel occupancy time is shared by a network device.

12. The apparatus according to claim 11, wherein the target channel access type obtained by the terminal device according to a specification or the target time domain resource comprises the Type 1 channel access.

13. The apparatus according to claim 12, wherein the Type 1 channel access has a smallest value of channel access priority class.

14. The apparatus according to claim 12, wherein the processor is configured to invoke and run the computer program stored in the memory to further perform:

if the target time domain resource belongs to a shared channel occupancy time, obtaining, by the terminal device the target channel access type, which comprises the Type 2 channel access; or

if the target time domain resource does not belong to a shared channel occupancy time, obtaining, by the terminal device, the target channel access type, which comprises the Type 1 channel access.

15. The apparatus according to claim 14, wherein the shared channel occupancy time is shared by a network device or the terminal device.

16. The apparatus according to claim 13, wherein, in a case where the target channel access type obtained by the terminal device according to a specification is the Type 1 channel access that has the smallest value of channel access priority class, the processor is configured to invoke and run the computer program stored in the memory, to further perform, if the target time domain resource belongs to a shared channel occupancy time, switching the target channel access type from the Type 1 channel access that has the smallest value of channel access priority class to the Type 2 channel access.

17. The apparatus according to claim 16, wherein if the target time domain resource does not belong to a shared channel occupancy time, determining, by the terminal device, the target channel access type is the Type 1 channel access that has the smallest value of channel access priority class.

18. An apparatus for random access, applied in shared spectrum, comprising a processor and a memory, wherein the memory is configured to store a computer program, and the processor is configured to invoke and run the computer program stored in the memory to perform:

sending, by a network device, first indication information to a terminal device via signaling of a physical layer when a random access procedure corresponding to a physical random access channel (PRACH) is a contention-free random access procedure, to indicate the terminal device to determine, according to the first indication information, a target channel access type for the terminal device to transmit the PRACH on a carrier of a shared spectrum,

wherein indicating the terminal device to determine, according to the first indication information, a target channel access type comprises: if the target time domain resource belongs to a shared channel occupancy time, indicating the terminal device to obtain the target channel

access type comprising the Type 2 channel access; or if the target time domain resource does not belong to a shared channel occupancy time, indicating the terminal device to obtain the target channel access type comprising the Type 1 channel access, and

wherein the shared channel occupancy time is shared by a network device.