CLAIMS:

1. A method for random access, comprising:

determining, by a terminal device, a first random access manner for random access; and

performing, by the terminal device, random access process according to the first random access manner,

wherein the random access process performed by using the first random access manner is a 4-step random access process or a 2-step random access process, and

wherein, the determining, by the terminal device, the first random access manner for random access, comprises:

determining the first random access manner by the terminal device according to a current link quality value between the terminal device and a network device.

2. The method according to claim 1, wherein, at least one of numbers of interactive messages and information carried in the interactive messages, in the random access processes performed by using different random access manners, are different.

3. The method according to claim 1 or 2, wherein, the determining, by the terminal device, the first random access manner for random access, further comprises:

determining the first random access manner by the terminal device according to at least one of following information:

pre-configured multiple random access manners;

a random function;

level information of the terminal device;

service information of service to be transmitted by the terminal device;

a triggering reason of the random access process;

position information about where the terminal device is located currently;

a time at which the terminal device performs the random access process;

a resource used by the terminal device for performing the random access process;

a frequency band in which a frequency domain resource used by the terminal device for performing the random access process is located;

a frequency band supported by the terminal device;

a basic parameter set used by the terminal device for performing the random access process;

a random access manner used when a historical random access process is performed; and

whether a timer initiated when the historical random access process is performed expires.

4. The method according to claim 3, wherein, the determining, by the terminal device, the first random access manner for random access, comprises:

determining the first random access manner from the pre-configured multiple random access manners.

5. The method according to claim 3 or 4, wherein, the determining, by the terminal device, the first random access manner for random access, comprises:

acquiring, by the terminal device, a first probability value based on the random function; and

determining, according to a first corresponding relationship and the first probability value, the first random access manner, wherein, the first corresponding relationship is used to indicate a corresponding relationship between at least one probability range and at least one random access manner,

or,

the determining, by the terminal device, the first random access manner for random access, comprises:

acquiring, by the terminal device, a second probability value based on the random function; and

determining, according to a second corresponding relationship, the second probability value and a level indicated by the level information of the terminal device, the first random access manner, wherein, the second corresponding relationship is used to indicate a corresponding relationship between at least one level of the terminal device, at least one probability range and at least one random manner,

or,

the determining, by the terminal device, the first random access manner for random access, comprises:

acquiring, by the terminal device, a third probability value based on the random function; and

determining, according to a third corresponding relationship, the third probability value and a service quality level indicated by the service information of the service to be transmitted by the terminal device, the first random access manner, wherein, the second corresponding relationship is used to indicate a corresponding relationship between at least one service quality level, at least one probability range and at least one random manner.

6. The method according to claim 3 or 4, wherein, the service information of the service to be transmitted by the terminal device is used to indicate at least one of followings:

a service quality level of the service to be transmitted, a delay requirement of the service to be transmitted, a data amount of the service to be transmitted, a service type of the service to be transmitted, a call type of the service to be transmitted, a carrier to which the service to be transmitted belongs, a data stream to which the service to be transmitted belongs, and a logical channel to which the service to be transmitted belongs.

7. The method according to claim 3, 4 or 6, wherein, the service information of the service to be transmitted by the terminal device is carried in a paging message of a network device.

8. The method according to claim 7, wherein, the determining, by the terminal device, the first random access manner for random access, comprises:

determining, by the terminal device, the first random access manner, according to a fourth corresponding relationship, and at least one of a service quality level of the service to be transmitted, a delay requirement of the service to be transmitted, a data amount of the service to be transmitted, a service type of the service to be transmitted, a call type of the service to be transmitted, a carrier to which the service to be transmitted belongs, a data stream to which the service to be transmitted belongs, and a logical channel to which the service to be transmitted belongs;

wherein, the fourth corresponding relationship is used to indicate a corresponding relationship between at least one random access manner and at least one of follows: at least one service quality level, at least one delay requirement, at least one range of the data amount, at least one service type, at least one call type, at least one carrier, at least one data stream, and at least one logical channel.

9. The method according to claim 3 or 4, wherein, the triggering reason of the random access process is any one of followings:

requesting an initial access by the terminal device;

converting from an idle state to a continuous state by the terminal device;

requesting an uplink synchronization by the terminal device;

requesting a terminal device identification to the network device by the terminal device;

performing a resource request to the network device by the terminal device;

a cell handover of the terminal device; and

a failure of a radio link of the terminal device.

10. The method according to claim 3, 4 or 9, wherein, determining, by the terminal device, the first random access manner for random access, comprises:

determining, by the terminal device, the first random access manner, according to the triggering reason of the random access process and a fifth corresponding relationship, wherein, the fifth corresponding relationship is used to indicate a corresponding relationship between at least one triggering reason and at least one random access manner of the random access process,

or,

the determining, by the terminal device, the first random access manner for random access, comprises:

determining, by the terminal device, the first random access manner, according to a sixth corresponding relationship, and the current link quality value between the terminal device and the network device; wherein, the sixth corresponding relationship is used to indicate a corresponding relationship between at least one link quality value and at least one random access manner,

or,

the determining, by the terminal device, the first random access manner for random access, comprises:

determining, by the terminal device, the first random access manner, according to a seventh corresponding relationship, and a position indicated by the position information about where the terminal device is located currently; wherein, the seventh corresponding relationship is used to indicate a corresponding relationship between at least one position and at least one random access manner,

or,

the determining, by the terminal device, the first random access manner for random access, comprises:

determining, by the terminal device, the first random access manner, according to an

eighth corresponding relationship, and the time at which the terminal device performs the random access process; wherein, the eighth corresponding relationship is used to indicate a corresponding relationship between at least one time range and at least one random access manner,

or,

the determining, by the terminal device, the first random access manner for random access, comprises:

determining, by the terminal device, the first random access manner, according to a ninth corresponding relationship and the resource used by the terminal device for performing the random access process; wherein, the ninth corresponding relationship is used to indicate a corresponding relationship between at least one resource range and at least one random access manner,

or,

the determining, by the terminal device, the first random access manner for random access, comprises:

determining, by the terminal device, the first random access manner, according to a tenth corresponding relationship and the frequency band supported by the terminal device or the frequency band in which the frequency domain resource used by the terminal device for performing the random access process is located; wherein, the tenth corresponding relationship is used to indicate a corresponding relationship between at least one frequency band and at least one random access manner,

or,

the determining, by the terminal device, the first random access manner for random access, comprises:

determining, by the terminal device, the first random access manner, according to an eleventh corresponding relationship and the basic parameter set used by the terminal device for performing the random access process; wherein, the eleventh corresponding relationship is used to indicate a corresponding relationship between at least one basic parameter set and at least one random access manner,

or,

the determining, by the terminal device, the first random access manner for random access, comprises:

when a predetermined number of the random access processes are initiated by

adopting a second random access manner and the access is not successful, determining, by the terminal device, the first random access manner, the first random access manner being different from the second random access manner,

or,

the determining, by the terminal device, the first random access manner for random access, comprises:

when a timer for determining the random access manner initiated when the historical random access process is performed is not expired, determining the same random access manner as that used by the historical random access process as the first random access manner; or,

when a timer for determining the random access manner initiated when the historical random access process is performed is expired, determining a different random access manner from that used by the historical random access process as the first random access manner.

11. The method according to claim 10, wherein, the timer for determining the random access process initiated when the historical random access process is performed is a timer that is initiated by a previous random access process; and the method further comprises:

initiating, by the terminal device, the timer for determining the random access manner in each random access process.

12. The method according to claim 11, further comprising:

initiating, by the terminal device, a timer for determining the random access manner for a subsequent random access process in the random access process after the timer that was initiated last time for determining the random access manner is expired.

13. The method according to any one of claims 1 to 12, wherein, the performing, by the terminal device, the random access process according to the first random access manner, comprises:

performing, by the terminal device, the random access process, according to the first random access manner, by using a resource configured for the first random access manner or a resource configured for a second random access manner.

14. A terminal device, comprising:

a processor; and

a memory for storing instructions executable by the processor;

wherein the processor is configured to perform the method for random access according to any one of claims 1-13.