

CLAIMS:

1. A method for random access, comprising:

determining (210), by a first device, a first basic parameter set to be used by a first message transmitted during a random access procedure; and

transmitting (220), by the first device using the first basic parameter set, the first message to a second device,

wherein the determining (210), by a first device, a first basic parameter set to be used by a first message transmitted during a random access procedure comprises:

determining, by the first device, the first basic parameter set according to a frequency band of a frequency domain resource to be used when transmitting the first message and a correspondence between at least one frequency band and at least one basic parameter set; and

wherein the first message is MSG2 or MSG4, and

wherein the basic parameter set may include at least one of following parameters: subcarrier spacing, the number of subcarriers in a particular bandwidth, the number of subcarriers in a physical resource block, PRB, length of orthogonal frequency division multiplexing, OFDM, symbol, the number of points of Fourier transform such as fast Fourier transform, FFT, or inverse Fourier transform such as inverse fast Fourier transform, IFFT, for generating an OFDM signal, the number of OFDM symbols in transmission time interval, TTI, the number of TTIs included within a certain length of time, and length of a signal prefix.

2. The method according to claim 1, wherein the first message used for random access is a message transmitted during a 4-step random access procedure, or a message transmitted during a 2-step random access procedure.

3. The method according to claim 1 or 2, wherein the first device is an access network

device, and the second device is a terminal device.

4. The method according to claim 3, wherein the determining (210), by a first device, a first basic parameter set to be used by a first message transmitted during a random access procedure further comprises:

determining, by the first device, the first basic parameter set according to at least one of following information:

pre-configured multiple basic parameter sets;

a random function;

rank information of the terminal device;

a quality value of a current link between the terminal device and the access network device;

information on a location where the terminal device currently is;

time required for performing the random access procedure;

information on a service to be transmitted of the terminal device;

a reason for triggering the random access procedure;

a resource used when transmitting the first message;

a basic parameter set supported by the terminal device;

a frequency band supported by the terminal device;

a random access mode used when performing the random access procedure;

information for indicating a basic parameter set carried in a historical message prior to the first message; and

a basic parameter set used by the historical message prior to the first message.

5. The method according to claim 4, wherein the determining, by the first device, the first basic parameter set comprises:

selecting, by the first device, the first basic parameter set from the pre-configured

multiple basic parameter sets.

6. The method according to claim 4 or 5, wherein the determining, by the first device, the first basic parameter set comprises:

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

determining, by the first device, the first basic parameter set according to a first correspondence and the first probability value, wherein the first correspondence is used to indicate a correspondence between at least one probability range and at least one basic parameter set.

7. The method according to claim 4 or 5, wherein the determining, by the first device, the first basic parameter set comprises:

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

and

determining, by the first device, the first basic parameter set according to a second correspondence, the second probability value, and a rank indicated by the rank information of the terminal device, wherein the second correspondence is used to indicate a correspondence between at least one terminal device rank, at least one probability range, and at least one basic parameter set.

8. A device for random access, comprising:

a determining unit (510), configured to determine a first basic parameter set to be used by a first message transmitted during a random access procedure; and

a transceiving unit (520), configured to transmit, using the first basic parameter set, the first message to a second device,

wherein the determining unit (510) is further configured to:

determine the first basic parameter set according to a frequency band of a frequency domain resource to be used when transmitting the first message and a

correspondence between at least one frequency band and at least one basic parameter set;
and

wherein the first message is MSG2 or MSG4, and

wherein the basic parameter set may include at least one of following parameters:
subcarrier spacing, the number of subcarriers in a particular bandwidth, the number of subcarriers in a physical resource block, PRB, length of orthogonal frequency division multiplexing, OFDM, symbol, the number of points of Fourier transform such as fast Fourier transform, FFT, or inverse Fourier transform such as inverse fast Fourier transform, IFFT, for generating an OFDM signal, the number of OFDM symbols in transmission time interval, TTI, the number of TTIs included within a certain length of time, and length of a signal prefix.

9. The device according to claim 8, wherein the first message used for random access is a message transmitted during a 4-step random access procedure, or a message transmitted during a 2-step random access procedure.

10. The device according to claim 8 or 9, wherein the device is an access network device, and the second device is a terminal device.

11. The device according to claim 10, wherein the determining unit (510) is further configured to:

determine the first basic parameter set according to at least one of following information:

pre-configured multiple basic parameter sets;

a random function;

rank information of the terminal device;

a quality value of a current link between the terminal device and the access network device;

information on a location where the terminal device currently is;
time required for performing the random access procedure;
information on a service to be transmitted of the terminal device;
a reason for triggering the random access procedure;
a resource used when transmitting the first message;
a basic parameter set supported by the terminal device;
a frequency band supported by the terminal device;
a random access mode used when performing the random access procedure;
information for indicating a basic parameter set carried in a historical message prior to the first message; and
a basic parameter set used by the historical message prior to the first message.

12. The device according to claim 11, wherein the determining unit (510) is further configured to:

select the first basic parameter set from the pre-configured multiple basic parameter sets.

13. The device according to claim 11 or 12, wherein the determining unit (510) is further configured to:

acquire a first probability value based on the random function; and

determine the first basic parameter set according to a first correspondence and the first probability value, wherein the first correspondence is used to indicate a correspondence between at least one probability range and at least one basic parameter set.

14. The device according to claim 11 or 12, wherein the determining unit (510) is further configured to:

acquire a second probability value based on the random function; and

determine the first basic parameter set according to a second correspondence, the second probability value, and a rank indicated by the rank information of the terminal device,

wherein the second correspondence is used to indicate a correspondence between at least one terminal device rank, at least one probability range, and at least one basic parameter set.

15. A device for random access, comprising a memory, a processor and a transceiver;
the memory is configured to store a program code;
the processor is configured to execute the program code stored in the memory and control the transceiver to communicate externally; and
when the program code is executed, the processor is configured to perform the method for random access according to any one of claims 1-7.