

[00298] Optionally, as shown in Fig. 6, the device 600 may include a transceiver 630, and the processor 610 may control the transceiver 630 to communicate externally.

[00299] Optionally, the processor 610 may call the program code stored in the memory 620 to perform the corresponding operations of the terminal device in the method 200 shown in Fig. 2, and it will not be elaborated herein for brevity.

[00300] Fig. 7 is a schematic block diagram showing a system chip according to an embodiment of the present application. The system chip 700 in Fig. 7 includes an input interface 701, an output interface 702, the processor 703 and the memory 704 are connected by a communication connection, and the processor 703 is configured to execute the code in the memory 704.

[00301] Optionally, when the code is performed, the processor 703 implements the method performed by the terminal device in the method embodiment. It will not be elaborated herein for brevity.

[00302] Those of ordinary skills in the art may be aware that, the units and algorithm steps in individual examples described in combination with the embodiments described in the present disclosure may be implemented by electronic hardware or a combination of computer software and electronic hardware. Whether the functions are performed by hardware or software depends on particular applications and design constraint conditions of the technical solutions. A person skilled in the art may use different methods to implement the described functions for each particular application, but it should not be considered that the implementation goes beyond the scope of the present application.

[00303] It may be clearly understood by those skilled in the art that, for the purpose of convenient and brief description, for a detailed working process of the foregoing system, device, and unit, reference may be made to a corresponding process in the foregoing method embodiments, and details are not described herein again.

[00304] In the several embodiments provided in the present application, it should be understood that the disclosed systems, devices and methods may be implemented in other ways. For example, the device embodiments described above are merely illustrative. For example, the division of the units is only a kind of logical function division. In practice, other division manner may be used. For example, multiple units or components may be combined

or integrated into another system, or some features may be ignored or not performed. In addition, the illustrated or discussed mutual coupling or direct coupling or communication connection may be indirect coupling or communication connection through some interfaces, devices or units, and may be in electrical, mechanical or other forms.

[00305] The units described as separated parts may or may not be physically separated, and the parts displayed as units may or may not be physical units, that is, may be located in one place, or may be distributed on multiple network units. Some or all of the units may be selected according to actual needs to achieve the objectives of the solutions in the embodiments.

[00306] In addition, each functional unit in each embodiment of the present application may be integrated in one processing unit, or each unit may exist alone physically, or two or more units may be integrated in one unit.

[00307] The functions may also be stored in a computer-readable storage medium if being implemented in the form of a software functional unit and sold or used as an independent product. Based on such understanding, the essence of the technical solutions of the present application, or the part contributing to the prior art or all or a part of the technical solutions, may be embodied in the form of a software product. The computer software product is stored in a storage medium including a number of instructions such that a computer device (which may be a personal computer, a server, or a network device, etc.) performs all or a part of steps of the method described in each of the embodiments of the present application. The foregoing storage medium includes: any medium that is capable of storing program codes such as a USB disk, a mobile hard disk, a Read-Only Memory (ROM), a Random Access Memory (RAM), a magnetic disk or an optical disk, and the like.

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.
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 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.
4. The method according to any one of claims 1 to 3, 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 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;
 - a current link quality value between the terminal device and a network device;
 - 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.

5. The method according to claim 4, 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.

6. The method according to claim 4 or 5, 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.

7. The method according to claim 4 or 5, 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.

8. The method according to claim 4, 5 or 7, wherein, the service information of the service to be transmitted by the terminal device is carried in a paging message of a network device.

9. The method according to claim 8, 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.

10. The method according to claim 4 or 5, 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.

11. The method according to claim 4, 5 or 10, 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.

12. The method according to claim 11, 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.

13. The method according to claim 12, 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.

14. The method according to any one of claims 1 to 13, 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.

15. 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 1-14.