CLAIMS

1. A method for receiving a paging message, comprising:

determining, by a terminal device, a paging starting moment and a paging receiving duration;

determining, by the terminal device, a duration of a period in which the terminal device continuously listens for the paging message as the paging receiving duration; and

receiving, by the terminal device, the paging message according to the paging starting moment and the paging receiving duration;

wherein determining, by the terminal device, the paging starting moment and the paging receiving duration comprises:

determining, by the terminal device, the paging starting moment according to a paging cycle of the terminal device and UE_ID of the terminal device, wherein the UE_ID indicates identification of the terminal device; and

receiving, by the terminal device, a system message from an access network device, the system message comprising information configured to indicate the duration of the period in which the terminal device continuously listens for the paging message;

wherein the paging message is transmitted by the access network device through L paging beams in a manner of beam scanning according to the paging starting moment, a paging transmitting duration being a duration of the beam scanning; and wherein a number of paging beams needed for transmitting of the paging message is determined as L by the access network device according to the duration of the period in which the terminal device continuously listens for the paging message, L being a positive integer more than or equal to 1.

2. The method of claim 1, wherein the paging receiving duration is more than or equal to the paging transmitting duration.

3. The method of claim 1 or 2, wherein the paging cycle comprises a first period and a second period, the first period is the period in which the terminal device continuously listens for the paging message, the second period is a period in which the terminal

device is in a sleep state, and

wherein the paging cycle is N times the duration of the first period, N being a positive integer larger than 1.

4. The method of claim 3, wherein receiving, by the terminal device, the paging message according to the paging starting moment and the paging receiving duration comprises:

at the paging starting moment, starting, by the terminal device, a first timer, and simultaneously starting continuously listening, by the terminal device, for the paging message in the first period, a timing period of the first timer being the paging cycle;

in case that the paging message is not heard by the terminal device in the first period, entering, by the terminal device, the sleep state; and

responsive to determining, by the terminal device, timeout of the first timer, restarting continuously listening, by the terminal device, for the paging message.

5. The method of claim 3, wherein receiving, by the terminal device, the paging message according to the paging starting moment and the paging receiving duration comprises:

continuously listening, by the terminal device, for the paging message in the first period from the paging starting moment;

in case that the paging message is not heard by the terminal device in the first period, at an ending moment of the first period, starting, by the terminal device, a second timer and simultaneously entering, by the terminal device, the sleep state, a timing period of the second timer being a duration of the second period; and

responsive to determining, by the terminal device, timeout of the second timer, restarting continuously listening, by the terminal device, for the paging message.

6. The method of any one of claims 3-5, wherein the paging message is started, from the paging starting moment, to be transmitted by the access network device in the manner of beam scanning by means of the L paging beams, any two of the L paging beams correspond to different paging transmitting durations, and the duration of the first period is more than or equal to a maximum value of paging transmitting durations corresponding to the L paging beams, L being a positive integer more than or equal to

2.

7. The method of claim 6, wherein a value of L is 2, a paging transmitting duration corresponding to one of the two paging beams is a cell-specific continuous listening duration of a cell where the terminal device is located or a preset duration, and a paging transmitting duration corresponding to another of the two paging beams is a terminal device specific continuous listening duration of the terminal device.

8. The method according to claim 1 or 2, further comprising:

transmitting, by the terminal device, a response message configured to indicate that the paging message is successfully received, to the access network device; and

when the terminal device receives an acknowledgment message for the response message from the access network device, starting, by the terminal device, a third timer, and simultaneously entering, by the terminal device, a sleep state; or, at a moment of K time units after the acknowledgment message is received, starting, by the terminal device, the third timer, and simultaneously entering, by the terminal device, the sleep state, K being a positive integer more than or equal to 1.

9. The method of any one of claims 1-8, wherein the paging starting moment is calculated based on

$$SFN \bmod T = (T \operatorname{div} N) * (UE_ID \bmod N);$$

wherein SFN represents a system frame number, T represents the paging cycle of the terminal device; N: N=min(T, nB), nB represents a paging density, and UE_ID is included in the paging message, div represents a division operation and mod represents a remainder calculation operation.

10. A terminal device, comprising:

a determination module, configured to determine a paging starting moment and a paging receiving duration;

the determination module being further configured to determine a duration of a period in which the terminal device continuously listens for the paging message as the paging receiving duration; and

a transceiver module, configured to receive the paging message according to the

paging starting moment and the paging receiving duration;

wherein the determination module is further configured to determine the paging starting moment according to a paging cycle of the terminal device and UE_ID of the terminal device, wherein the UE_ID indicates identification of the terminal device; and

wherein the transceiver module is further configured to receive a system message from an access network device, the system message comprising information configured to indicate the duration of the period in which the terminal device continuously listens for the paging message;

wherein the paging message is transmitted by the access network device through L paging beams in a manner of beam scanning according to the paging starting moment, a paging transmitting duration being a duration of the beam scanning; and wherein a number of paging beams needed for transmitting of the paging message is determined as L by the access network device according to the duration of the period in which the terminal device continuously listens for the paging message, L being a positive integer more than or equal to 1.

11. The terminal device of claim 10, wherein the paging receiving duration is more than or equal to the paging transmitting duration.

12. The terminal device of claim 11, wherein the paging cycle comprises a first period and a second period, the first period is the period in which the terminal device continuously listens for the paging message, the second period is a period in which the terminal device is in a sleep state.

13. The terminal device of claim 12, wherein, in terms of receiving the paging message according to the paging starting moment and the paging receiving duration, the transceiver module is configured to:

at the paging starting moment, start a first timer, and simultaneously start continuously listening for the paging message in the first period, a timing period of the first timer being the paging cycle; and

in case that the paging message is not heard in the first period, cause the terminal device to enter the sleep state,

wherein the determination module is further configured to, responsive to

determining timeout of the first timer, cause the transceiver module to restart continuously listening for the paging message.

14. The terminal device of claim 12, wherein, in terms of receiving the paging message according to the paging starting moment and the paging receiving duration, the transceiver module is configured to:

continuously listen for the paging message in the first period from the paging starting moment; and

in case that the paging message is not heard in the first period, at an ending moment of the first period, start a second timer, and simultaneously cause the terminal device to enter the sleep state, a timing period of the second timer being a duration of the second period,

wherein the determination module is further configured to, responsive to determining timeout of the second timer, cause the terminal device to restart continuously listening for the paging message.

15. The terminal device of any one of claims 12-14, wherein the paging cycle is N times the duration of the first period, N being a positive integer larger than 1.

16. The terminal device of any one of claims 12-15, wherein the paging message is started to be transmitted by the access network device from the paging starting moment in the manner of beam scanning by means of the L paging beams, any two of the L paging beams correspond to different paging transmitting durations, and the duration of the first period is more than or equal to a maximum value of paging transmitting durations corresponding to the L paging beams, L being a positive integer more than or equal to 2.

17. The terminal device of claim 16, wherein a value of L is 2, a paging transmitting duration corresponding to one of the two paging beams is a cell-specific continuous listening duration of a cell where the terminal device is located or a preset duration, and a paging transmitting duration corresponding to another of the two paging beams is a terminal device specific continuous listening duration of the terminal device.

18. The terminal device of claim 10 or 11, wherein the transceiver module is further configured to:

transmit a response message, configured to indicate that the paging message is successfully received, to the access network device; and

upon receiving an acknowledgment message for the response message from the access network device, start a third timer, and simultaneously cause the terminal device to enter a sleep state; or at a moment of K time units after the acknowledgment message is received, start the third timer, and simultaneously cause the terminal device to enter the sleep state, K being a positive integer more than or equal to 1.

19. The terminal device of any one of claims 10-18, wherein the paging starting moment is calculated based on

$$SFN \bmod T = (T \operatorname{div} N) * (UE_ID \bmod N);$$

wherein SFN represents a system frame number, T represents the paging cycle of the terminal device; N: N=min(T, nB), nB represents a paging density, and UE_ID is included in the paging message, div represents a division operation and mod represents a remainder calculation operation.