

What is claimed is:

1. A cell search method, applied to a terminal device in an inactive state, wherein the inactive state refers to that the terminal device is disconnected from a network device, wherein both the network device and the terminal device retain context information of the terminal device, and wherein the context information is used for establishing a connection between the terminal device and the network device;

the method comprising:

entering, by the terminal device, an arbitrary cell search state and searching for an acceptable cell or a suitable cell when the terminal device does not search out any suitable cell to reside in, wherein the acceptable cell is a cell in which the terminal device is capable of residing and only obtaining a restricted service, and the suitable cell is a cell in which the terminal device is capable of residing and obtaining a normal service;

when entering the arbitrary cell search state, continuing to maintain, by the terminal device, the inactive state and a second timer, wherein the second timer comprises a location update timer.

2. The method of claim 1, further comprising:

when searching out the acceptable cell, residing, by the terminal device, in the acceptable cell and continuing to search for the suitable cell.

3. The method of claim 1 or 2, further comprising:

when entering the arbitrary cell search state, starting, by the terminal device, a first timer;

when the first timer expires and no suitable cell is searched out, entering, by the terminal device, an idle state and deleting the context information; and

when the first timer is not expired and the suitable cell is searched out, stopping, by the terminal device, the first timer and residing in the suitable cell.

4. The method of claim 3, wherein before starting, by the terminal device, the first timer, the method further comprises:

receiving, by the terminal device, configuration information sent by the network device,

wherein the configuration information is used for the terminal device to configure the first timer.

5        5. The method of claim 4, wherein the configuration information is information configured for the terminal device when the network device instructs the terminal device to enter the inactive state.

6. The method of claim 1 or 2, further comprising:

when entering the arbitrary cell search state, entering, by the terminal device, an idle state and deleting the context information.

7. The method of claim 1, further comprising:

10        when the location update timer expires, entering, by the terminal device, an idle state and deleting the context information.

8. The method of any one of claims 3 to 7, further comprising:

after entering the idle state and deleting the context information, continuing to maintain, by the terminal device, the arbitrary cell search state.

15        9. A terminal device, wherein the terminal device is in an inactive state, the inactive state refers to that the terminal device is disconnected from a network device, wherein both the network device and the terminal device retain context information of the terminal device, and wherein the context information is used for establishing a connection between the terminal device and the network device;

20        the terminal device comprising:

a processing unit, configured to enter an arbitrary cell search state and search for an acceptable cell or a suitable cell when the terminal device does not search out any suitable cell to reside in, wherein the acceptable cell is a cell in which the terminal device is capable of residing and only obtaining a restricted service, and the suitable cell is a cell in which the terminal device is capable of residing and obtaining a normal service;

wherein the processing unit is further configured to:

when the terminal device enters the arbitrary cell search state, continue to maintain the inactive state and a second timer, wherein the second timer comprises a location update timer.

10. The terminal device of claim 9, wherein the processing unit is further configured to, when the terminal device searches out the acceptable cell, reside in the acceptable cell and continue to search for the suitable cell.

5 11. The terminal device of claim 9 or 10, wherein the processing unit is further configured to:

start a first timer when the terminal device enters the arbitrary cell search state;

when the first timer expires and no suitable cell is searched out, enter an idle state and delete the context information; and

10 when the first timer is not expired and the suitable cell is searched out, stop the first timer and reside in the suitable cell.

12. The terminal device of claim 11, further comprising:

a transceiving unit, configured to receive configuration information sent by the network device before the processing unit starts the first timer, wherein the configuration information is used for the terminal device to configure the first timer.

15 13. The terminal device of claim 12, wherein the configuration information is information configured for the terminal device when the network device instructs the terminal device to enter the inactive state.

14. The terminal device of claim 9 or 10, wherein the processing unit is further configured to:

20 when the terminal device enters the arbitrary cell search state, enter an idle state and delete the context information.

15. The terminal device of claim 9, wherein the processing unit is further configured to:

when the location update timer expires, enter an idle state and delete the context information.

25 16. The terminal device of any one of claims 11 to 15, wherein the processing unit is further configured to:

after the terminal device enters the idle state and deletes the context information, continue

to maintain the arbitrary cell search state.