device starts a switchover timer, and switches a service of the active cell to a neighboring cell of the active cell, a sending unit of the active device sends a switchover request to the standby device, and the switchover unit of the active device starts a switchover waiting timer; after a receiving unit of the standby device receives the switchover request, the control unit of the standby device enables all the carriers of the standby cell to work, a recording unit of the standby device records a switchover alarm, and a sending unit of the standby device sends a switchover response to the active device; after a receiving unit of the active device receives the switchover response, the switchover unit of the active device stops the switchover waiting timer, and a recording unit of the active device records a switchover alarm.

With reference to the second possible implementation manner of the second aspect, in a fifth possible implementation manner, a switchover unit of the standby device is configured to perform a switchover from the standby network to the active network when the standby network works, a BCCH carrier of the active cell is normal, an OML link of the active device of the active cell is normal, and an A-interface link of the active device ~~an active base station controller~~ is normal.

With reference to any one of the first to the fifth possible implementation manners of the second aspect, in a sixth possible implementation manner, the configuring unit configures the non-BCCH carrier of the standby cell as a subset of non-BCCH carriers of the active cell.

With reference to the second aspect or the foregoing possible implementation manners of the second aspect, in a seventh possible implementation manner, the active device and the standby device are connected by using a same core network, or the active device and the standby device are connected by using different core networks.

According to a third aspect, a device for dual network backup is provided, including a processor and a memory, where the memory is configured to store information that the processor executes the following method; and the processor is configured to: generate a one-to-one correspondence between an active cell and a standby cell, where coverage areas of the active cell and the standby cell are the same, the active cell is managed by an active base station that is managed by an active device, and the standby cell is managed by a standby base station that is managed by a standby device; enable, according to whether a current network is an active network or a standby network, corresponding carriers of the active cell and

corresponding carriers of the standby cell to separately work; and query a network availability status, and when it is determined that the network availability status meets a designated condition, perform a switchover between the active network and the standby network.

In a first possible implementation manner, the processor is further configured to configure different BCCH carriers for the active cell and the standby cell, where the BCCH carriers are carriers, which are used to send a broadcast channel, among cell carriers, and a carrier, except a BCCH carrier, among all carriers of one cell is a non-BCCH carrier.

With reference to the first possible implementation manner of the third aspect, in a second possible implementation manner, when the current network is the active network, a processor of the active device enables all carriers of the active cell to work, and a processor of the standby device enables a BCCH carrier of the standby cell to work and a non-BCCH carrier to skip working; or when the current network is the standby network, a processor of the standby device enables all carriers of the standby cell to work, and a processor of the active device enables all carriers of the active cell to skip working.

With reference to the second possible implementation manner of the third aspect, in a third possible implementation manner, the processor is specifically configured to: when the BCCH carrier of the standby cell is normal, an operation and maintenance link OML link of the standby device of the standby cell is normal, an A-interface link of the standby device is normal, and the standby device is normal, perform a switchover from the active network to the standby network if one of the following situations is met: a BCCH carrier of the active cell is faulty; the BCCH carrier of the active cell is normal, but an OML link of the active device of the active cell is faulty, and a delay protection time for OML link interruption expires; and an A-interface link of the active device is faulty, and the active device is faulty.

With reference to the third aspect or the foregoing possible implementation manners of the third aspect, in a fourth possible implementation manner, the processor of the active device starts a switchover timer, switches a service of the active cell to a neighboring cell of the active cell, sends a switchover request to the standby device, and starts a switchover waiting timer; after ~~a receiving unit~~the processor of the standby device receives the switchover request, the processor of the standby device enables all the carriers of the standby cell to work, a memory of the standby device records a switchover alarm, and the processor of the standby device

sends a switchover response to the active device; after the processor of the active device receives the switchover response, the processor of the active device stops the switchover waiting timer, and a memory of the active device records a switchover alarm.

With reference to the second possible implementation manner of the third aspect, in a fifth possible implementation manner, the processor of the standby device is configured to perform a switchover from the standby network to the active network when the standby network works, a BCCH carrier of the active cell is normal, an OML link of the active device of the active cell is normal, and an A-interface link of thean active devicebase station controller is normal.

With reference to any one of the first to the fifth possible implementation manners of the third aspect, in a sixth possible implementation manner, the processor configures the non-BCCH carrier of the standby cell as a subset of non-BCCH carriers of the active cell.

With reference to the third aspect or the foregoing possible implementation manners of the third aspect, in a seventh possible implementation manner, the active device and the standby device are connected by using a same core network, or the active device and the standby device are connected by using different core networks.

According to a fourth aspect, a wireless communications system is provided, including a base station and any one of the foregoing devices.

In the foregoing technical solutions, a correspondence between an active cell and a standby cell is generated, corresponding carriers are configured, according to whether a current network is an active network or a standby network, to work, and a switchover between the active network and the standby network is performed according to a network availability status, so that mobile network reliability is ensured more adequately at a cell level.

BRIEF DESCRIPTION OF DRAWINGS

To describe the technical solutions in the embodiments of the present invention more clearly, the following briefly introduces the accompanying drawings required for describing the embodiments or the prior art. Apparently, the accompanying drawings in the following description show merely some embodiments of the present invention, and a person of

ordinary skill in the art may still derive other drawings from these accompanying drawings without creative efforts.

FIG. 1 is a schematic networking diagram of a wireless communications system according to an embodiment of the present invention;

FIG. 2 is a schematic flowchart of a method for dual network backup according to an embodiment of the present invention;

FIG. 3 is a schematic flowchart of another method for dual network backup according to an embodiment of the present invention;

FIG. 4 is a schematic block diagram of a device for dual network backup according to an embodiment of the present invention;

FIG. 5 is a schematic block diagram of another device for dual network backup according to an embodiment of the present invention; and

FIG. 6 is a schematic block diagram of another device for dual network backup according to an embodiment of the present invention.

DESCRIPTION OF EMBODIMENTS

The following clearly and completely describes the technical solutions in the embodiments of the present invention with reference to the accompanying drawings in the embodiments of the present invention. Apparently, the described embodiments are some but not all of the embodiments of the present invention. All other embodiments obtained by a person of ordinary skill in the art based on the embodiments of the present invention without creative efforts shall fall within the protection scope of the present invention.

The technical solutions of the present invention may be applied to communications systems of various RATs, such as a Global System for Mobile Communications (GSM, Global System ~~of~~ for Mobile communications), a Code Division Multiple Access (CDMA, Code Division Multiple Access) system, a Wideband Code Division Multiple Access (WCDMA, Wideband Code Division Multiple Access ~~Wireless~~) system, and a general packet radio service (GPRS, General Packet Radio Service) system, where the WCDMA and the GPRS are also referred to as a UMTS (Universal Mobile Telecommunications System, Universal Mobile

Telecommunications System).

A user equipment (UE, User Equipment), also referred to as a mobile terminal (Mobile Terminal), a mobile user equipment, and the like, may communicate with one or more core networks (Core Network) through a radio access network (~~for example,~~ RAN, Radio Access Network). The user equipment may be a mobile terminal, such as a mobile phone (also referred to as a "cellular" phone) and a computer with a mobile terminal. For example, the user equipment may be a portable, pocket-sized, handheld, computer built-in, or in-vehicle mobile apparatus, which exchanges voice and/or data with the radio access network.

A base station may be a base station (BTS, Base Transceiver Station) in the GSM or CDMA, or a base station (NodeB) in the WCDMA; a base station controller may be a base station controller (Base Station Controller, BSC) in the GSM or CDMA, or an RNC (Radio Network Controller) in the WCDMA. The GSM, the UMTS, and the like belong to a radio scope, and the embodiments of the present invention may be used for radio network backup of the GSM, and may also be used for radio network backup of another RAT, which is not limited in the present invention. However, for ease of description, the following embodiments are described by using a BSC, a BTS, and the like in the GSM as examples.

In addition, the terms "system" and "network" may be used interchangeably in this specification. The term "and/or" in this specification describes only an association relationship for describing associated objects and represents that three relationships may exist. For example, A and/or B may represent the following three cases: Only A exists, both A and B exist, and only B exists. In addition, the character "/" in this specification generally indicates an "or" relationship between the associated objects.

Existing technologies for improving mobile network reliability mainly include disaster recovery backup. In a technology, when an active base station controller shuts down, a standby base station controller takes over a service of the active base station controller. The technology is at a base station controller level. For another network element, the active base station controller and the standby base station controller are the same, the active base station controller has an IP address the same as that of the base station controller of which a current status is a standby state, and only one base station controller works in a same period of time.

If a base station controller works normally, but a fault, for example, a carrier fault or an

station controller 11. FIG. 1 further shows an active cell 13 managed by the active base station 12. The standby network devices include a standby base station controller 14 and a standby base station 15 managed by the standby base station controller 14. FIG. 1 further shows a standby cell 16 managed by the standby base station 15. The active base station controller 11 and the standby base station controller 14 are separately connected to a core network 18.

In methods for dual network backup in the embodiments of the present invention, a switchover between an active network and a standby network is performed according to a network availability status. The switchover between the active network and the standby network refers to a switchover between working statuses of an active cell of the active network and a standby cell of the standby network. For example, if a switchover from the active network to the standby network is performed, the standby cell 16 of the standby network mainly undertakes work, but the active cell 13 of the active network does not work; if a switchover from the standby network to the active network is performed, the active cell 13 of the active network mainly undertakes the work, but the standby cell 16 of the standby network assists the work or does not work.

An active-standby cell binding relationship is generated, so that a same area is simultaneously covered by a pair of the active cell 13 and the standby cell 16, where the active cell and the standby cell are in a one-to-one correspondence. Among cells managed by one active base station controller, some cells may be configured as the active cell that has the active-standby cell binding relationship, and the remaining cells may exist as independent cells 17. A situation of the standby base station controller is similar, and cells managed by the standby base station controller may include both the standby cell and independent cells 17.

The active base station controller 11 and the standby base station controller 14 may belong to a same core network or different core networks. For brevity, in this embodiment of the present invention, only the core network 18 is used to show any of the foregoing situations, where a communications protocol between network elements is the same as that in the prior art. In Fig. 1, the active base station controller 11 and the standby base station controller 14 are connected by using the core network 18 and an IUR-G (Interface Between two RNCs, interface between two radio network controllers).

In a same network, an interface between a base station controller and a core network is

the active cell stops the switchover waiting timer, and reports a switchover alarm to indicate that the switchover is successful. One handshake is completed, and all carriers of the active cell are configured to skip working. If this handshake is not completed when the switchover timer expires, it is considered that the active-standby network switchover fails, and a reported switchover event alarm indicates that the switchover expires. The switchover waiting timer is mainly used to ensure that the active-standby network switchover is completed within a period of time, and a switchover result is displayed in a switchover event alarm.

After the standby cell of the standby base station controller receives the switchover request and determines that the standby cell is in an available state, the standby cell activates all carriers and sets the carriers to be in a working state, reports a switchover alarm, and returns a switchover response to the active cell. When the BCCH carrier of the standby cell is normal, an ~~operation and maintenance link~~ OML link of a base station in which the standby cell is located is normal, an A-interface link of the standby base station controller is normal, and the standby base station controller is normal, the standby cell is in the available state.

However, for a situation in which the active base station controller is faulty, and a handshake message between the active base station controller and the standby base station controller is lost, the standby cell directly sets all the carriers to be in the working state, and it is considered that the active cell does not work any more. In this way, when a fault occurs in the active cell, because the standby cell with a same coverage area is enabled, the service is farthest prevented from being interrupted. Further, when a fault occurs in an independent cell, because there is no dual network backup function, a service in a coverage area of the independent cell is interrupted. Compared with a method for dual network backup at a base station controller level or at a site level in the prior art, this embodiment of the present invention may achieve network reliability at a cell level, so as to farthest ensure that the service is not affected.

Next, the method for dual network backup when a switchover from the standby network to the active network is performed is further described.

S345: When the standby network mainly undertakes work, all carriers of the standby cell work, and all carriers of the active cell do not work.

This is a working status of each cell when the standby network mainly undertakes the

BCCH carriers for the active cell and the standby cell, where the BCCH carriers are carriers, which are used to send a broadcast channel, among cell carriers, and a carrier, except a BCCH carrier, among all carriers of one cell is a non-BCCH carrier.

Optionally, as a different embodiment, when the current network is the active network, a control unit 52 of the active device enables all carriers of the active cell to work, and a control unit 52 of the standby device enables a BCCH carrier of the standby cell to work and a non-BCCH carrier to skip working; or when the current network is the standby network, a control unit 52 of the standby device enables all carriers of the standby cell to work, and a control unit of the active device enables all carriers of the active cell to skip working. Because different BCCH carriers are configured, the BCCH carriers of the active cell and the standby cell may simultaneously work on the active network, and the standby cell may carry some services of the active network.

Optionally, as a different embodiment, when the BCCH carrier of the standby cell is normal, an operation and maintenance link OML link of the standby device of the standby cell is normal, an A-interface link of the standby device is normal, and the standby device is normal, the switchover unit 53 specifically performs a switchover from the active network to the standby network if one of the following situations is met: a BCCH carrier of the active cell is faulty; the BCCH carrier of the active cell is normal, but an OML link of the active device of the active cell is faulty, and a delay protection time for OML link interruption expires; and an A-interface link of the active device is faulty, and the active device is faulty. When one of the foregoing situations occurs, it is determined that a fault occurs in the active cell of the active network, so that an active-standby network switchover is started.

Optionally, as a different embodiment, a switchover unit 53 of the active device starts a switchover timer, and switches a service of the active cell to a neighboring cell of the active cell, a sending unit 55 of the active device sends a switchover request to the standby device, and the switchover unit 53 of the active device starts a switchover waiting timer; after a receiving unit of the standby device receives the switchover request, the control unit of the standby device enables all the carriers of the standby cell to work, a recording unit of the standby device records a switchover alarm, and a sending unit of the standby device sends a switchover response to the active device; after a receiving unit 56 of the active device receives

the switchover response, the switchover unit 53 of the active device stops the switchover waiting timer, and a recording unit 57 of the active device records a switchover alarm. The switchover from the active network to the standby network is implemented by means of the foregoing switchover process. A switchover from the standby network to the active network is an inverse process of the foregoing switchover process.

Optionally, as a different embodiment, a switchover unit 53 of the standby device performs a switchover from the standby network to the active network when the standby network works, a BCCH carrier of the active cell is normal, an OML link of the active device of the active cell is normal, and an A-interface link of the active device ~~the active base station controller~~ is normal.

Optionally, as a different embodiment, the configuring unit 54 configures the non-BCCH carrier of the standby cell as a subset of non-BCCH carriers of the active cell. Therefore, frequency resources may be saved.

Optionally, as a different embodiment, the active device and the standby device are connected by using a same core network, or the active device and the standby device are connected by using different core networks. The active device and the standby device are connected by using the core network and various existing communications interfaces.

In this embodiment of the present invention, a correspondence between an active cell and a standby cell is generated, different BCCH carriers are configured for the active cell and the standby cell, corresponding carriers of the active cell and the standby cell are configured, according to whether a current network is an active network or a standby network, to work, and a switchover between the active network and the standby network is performed according to a network availability status, so that mobile network reliability is ensured at a cell level, and a BCCH carrier of the standby cell works when the active network works, thereby giving full play to functions of resources of a standby device.

FIG. 6 is a schematic block diagram of another device 60 for dual network backup according to an embodiment of the present invention. The device 60 includes a processor 61 and a memory 62.

The methods disclosed in the foregoing embodiments of the present invention may be applied to the processor 61, or be implemented by a processor ~~1461~~. The processor 61 may be a

implemented by means of the foregoing switchover process. A switchover from the standby network to the active network is an inverse process of the foregoing switchover process.

Optionally, as a different embodiment, the processor 61 of the standby device performs a switchover from the standby network to the active network when the standby network works, a BCCH carrier of the active cell is normal, an OML link of the active device of the active cell is normal, and an A-interface link of the active devicebase station controller is normal.

Optionally, as a different embodiment, the processor 61 configures the non-BCCH carrier of the standby cell as a subset of non-BCCH carriers of the active cell. Therefore, frequency resources may be saved.

Optionally, as a different embodiment, the active device and the standby device are connected by using a same core network, or the active device and the standby device are connected by using different core networks. The active device and the standby device are connected by using the core network and various existing communications interfaces.

In this embodiment of the present invention, a correspondence between an active cell and a standby cell is generated by using a processor, different BCCH carriers are configured for the active cell and the standby cell, corresponding carriers of the active cell and the standby cell are configured, according to whether a current network is an active network or a standby network, to work, and a switchover between the active network and the standby network is performed according to a network availability status, so that mobile network reliability is ensured at a cell level, and a BCCH carrier of the standby cell works when the active network works, thereby giving full play to functions of resources of a standby device.

A person of ordinary skill in the art may be aware that, in combination with the examples described in the embodiments disclosed in this specification, units and algorithm steps 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 invention.

It may be clearly understood by a person skilled in the art that, for the purpose of

CLAIMS

~~What is claimed is:~~

1. A method for dual network backup, characterized by comprising:

~~Generating~~generating (21) a one-to-one correspondence between an active cell and a standby cell, wherein coverage areas of the active cell and the standby cell are the same, the active cell is managed by an active base station that is managed by an active base station controller, and the standby cell is managed by a standby base station that is managed by a standby base station controller;

~~Enabling~~enabling (22), according to whether a current network is an active network or a standby network, corresponding carriers of the active cell and corresponding carriers of the standby cell to separately work; and

~~Querying~~querying (23) a network availability status, and performing (23), when it is determined that the network availability status meets a designated condition, a switchover between the active network and the standby network.

2. The method according to claim 1, wherein the method further comprises:

configuring different broadcast control channel, BCCH, carriers for the active cell and the standby cell, wherein the BCCH carriers are carriers, which are used to send a broadcast channel, among cell carriers, and a carrier, except a BCCH carrier, among all carriers of one cell is a non-BCCH carrier.

3. The method according to claim 2, wherein the enabling (22), according to whether a current network is an active network or a standby network, corresponding carriers of the active cell and corresponding carriers of the standby cell to separately work comprises:

when the current network is the active network, enabling, by the active base station controller, all carriers of the active cell to work, and enabling, by the standby base station controller, a BCCH carrier of the standby cell to work and a non-BCCH carrier to skip working; or

when the current network is the standby network, enabling, by the standby base station controller, all carriers of the standby cell to work, and enabling, by the active base station controller, all carriers of the active cell to skip working.

4. The method according to claim 3, wherein the performing (23), when it is determined that the network availability status meets a designated condition, a switchover between the active network and the standby network comprises:

when the BCCH carrier of the standby cell is normal, an operation and maintenance link OML link of the standby base station controller of the standby cell is normal, an A-interface link of the standby base station controller is normal, and the standby base station controller is normal, performing a switchover from the active network to the standby network if one of the following situations is met: a BCCH carrier of the active cell is faulty; the BCCH carrier of the active cell is normal, but an OML link of the active base station controller of the active cell is faulty, and a delay protection time for OML link interruption expires; and an A-interface link of the active base station controller is faulty, and the active base station controller is faulty.

5. The method according to claim 4, wherein the performing (23) a switchover from the active network to the standby network comprises:

starting, by the active base station controller, a switchover timer, switching a service of the active cell to a neighboring cell of the active cell, sending a switchover request to the standby base station controller, and starting a switchover waiting timer;

after receiving the switchover request, enabling, by the standby base station controller, all the carriers of the standby cell to work, recording a switchover alarm, and sending a switchover response to the active base station controller; and

after receiving the switchover response, stopping, by the active base station controller, the switchover waiting timer, and recording a switchover alarm.

6. The method according to claim 3, wherein the performing (23), when it is determined that the network availability status meets a designated condition, a switchover between the active network and the standby network comprises:

performing a switchover from the standby network to the active network when the standby network works, a BCCH carrier of the active cell is normal, an OML link of the active base station controller of the active cell is normal, and an A-interface link of the active base station controller is normal.

7. The method according to any one of claims 2 to 6, wherein the method further

comprises: configuring the non-BCCH carrier of the standby cell as a subset of non-BCCH carriers of the active cell.

8. The method according to any one of claims 1 to 7, wherein:

the active base station controller and the standby base station controller are connected by using a same core network, or the active base station controller and the standby base station controller are connected by using different core networks.

9. A device (40) for dual network backup, characterized by comprising a generating unit (41), a control unit (42), and a switchover unit (43), wherein

the generating unit (41) is configured to generate a one-to-one correspondence between an active cell and a standby cell, wherein coverage areas of the active cell and the standby cell are the same, the active cell is managed by an active base station that is managed by an active device, and the standby cell is managed by a standby base station that is managed by a standby device;

the control unit (42) is configured to enable, according to whether a current network is an active network or a standby network, corresponding carriers of the active cell and corresponding carriers of the standby cell to separately work; and

the switchover unit (43) is configured to: query a network availability status; and when it is determined that the network availability status meets a designated condition, perform a switchover between the active network and the standby network.

10. The device according to claim 9, wherein the device further comprises a configuring unit, wherein

the configuring unit (54) is configured to configure different broadcast control channel, BCCH, carriers for the active cell and the standby cell, wherein the BCCH carriers are carriers, which are used to send a broadcast channel, among cell carriers, and a carrier, except a BCCH carrier, among all carriers of one cell is a non-BCCH carrier.

~~11. The device according to claim 10, wherein:~~

~~when the current network is the active network, a control unit of the active device enables all carriers of the active cell to work, and a control unit of the standby device enables a BCCH carrier of the standby cell to work and a non-BCCH carrier to skip working; or~~

~~when the current network is the standby network, a control unit of the standby device~~

~~enables all carriers of the standby cell to work, and a control unit of the active device enables all carriers of the active cell to skip working.~~

12~~1~~. The device according to claim ~~11~~10, wherein:

the switchover unit (43) is specifically configured to: when the BCCH carrier of the standby cell is normal, an operation and maintenance link, OML, link of the standby device of the standby cell is normal, an A-interface link of the standby device is normal, and the standby device is normal, perform a switchover from the active network to the standby network if one of the following situations is met: a BCCH carrier of the active cell is faulty; the BCCH carrier of the active cell is normal, but an OML link of the active device of the active cell is faulty, and a delay protection time for OML link interruption expires; and an A-interface link of the active device is faulty, and the active device is faulty.

~~13. The device according to claim 12, wherein the device further comprises a sending unit, a receiving unit, and a recording unit, wherein~~

~~a switchover unit of the active device starts a switchover timer, and switches a service of the active cell to a neighboring cell of the active cell, a sending unit of the active device sends a switchover request to the standby device, and the switchover unit of the active device starts a switchover waiting timer;~~

~~after a receiving unit of the standby device receives the switchover request, the control unit of the standby device enables all the carriers of the standby cell to work, a recording unit of the standby device records a switchover alarm, and a sending unit of the standby device sends a switchover response to the active device; and~~

~~after a receiving unit of the active device receives the switchover response, the switchover unit of the active device stops the switchover waiting timer, and a recording unit of the active device records a switchover alarm.~~

~~14. The device according to claim 11, wherein:~~

~~a switchover unit of the standby device is configured to perform a switchover from the standby network to the active network when the standby network works, a BCCH carrier of the active cell is normal, an OML link of the active device of the active cell is normal, and an A-interface link of the active base station controller is normal.~~

15~~2~~. The device according to any one of claims 10 to ~~14~~11, wherein the configuring unit

(54) configures the non-BCCH carrier of the standby cell as a subset of non-BCCH carriers of the active cell.

~~16~~13. The device according to any one of claims 9 to ~~15~~12, wherein:

the active device and the standby device are connected by using a same core network, or the active device and the standby device are connected by using different core networks.

~~17. A device for dual network backup, comprising a processor and a memory, wherein~~

~~the memory stores information that the processor executes the following method; and~~

~~the processor is configured to: generate a one-to-one correspondence between an active cell and a standby cell, wherein coverage areas of the active cell and the standby cell are the same, the active cell is managed by an active base station that is managed by an active device, and the standby cell is managed by a standby base station that is managed by a standby device; enable, according to whether a current network is an active network or a standby network, corresponding carriers of the active cell and corresponding carriers of the standby cell to separately work; and query a network availability status, and when it is determined that the network availability status meets a designated condition, perform a switchover between the active network and the standby network.~~

~~18. The device according to claim 17, wherein:~~

~~the processor is further configured to configure different BCCH carriers for the active cell and the standby cell, wherein the BCCH carriers are carriers, which are used to send a broadcast channel, among cell carriers, and a carrier, except a BCCH carrier, among all carriers of one cell is a non-BCCH carrier.~~

~~19. The device according to claim 18, wherein:~~

~~when the current network is the active network, a processor of the active device enables all carriers of the active cell to work, and a processor of the standby device enables a BCCH carrier of the standby cell to work and a non-BCCH carrier to skip working; or~~

~~when the current network is the standby network, a processor of the standby device enables all carriers of the standby cell to work, and a processor of the active device enables all carriers of the active cell to skip working.~~

~~20. The device according to claim 19, wherein:~~

~~the processor is specifically configured to: when the BCCH carrier of the standby cell is~~

~~normal, an operation and maintenance link OML link of the standby device of the standby cell is normal, an A-interface link of the standby device is normal, and the standby device is normal, perform a switchover from the active network to the standby network if one of the following situations is met: a BCCH carrier of the active cell is faulty; the BCCH carrier of the active cell is normal, but an OML link of the active device of the active cell is faulty, and a delay protection time for OML link interruption expires; and an A-interface link of the active device is faulty, and the active device is faulty.~~

~~21. The device according to claim 20, wherein:~~

~~the processor of the active device starts a switchover timer, switches a service of the active cell to a neighboring cell of the active cell, sends a switchover request to the standby device, and starts a switchover waiting timer;~~

~~after the processor of the standby device receives the switchover request, the processor of the standby device enables all the carriers of the standby cell to work, a memory of the standby device records a switchover alarm, and the processor of the standby device sends a switchover response to the active device; and~~

~~after the processor of the active device receives the switchover response, the processor of the active device stops the switchover waiting timer, and a memory of the active device records a switchover alarm.~~

~~22. The device according to claim 19, wherein:~~

~~the processor of the standby device performs a switchover from the standby network to the active network when the standby network works, a BCCH carrier of the active cell is normal, an OML link of the active device of the active cell is normal, and an A-interface link of the active base station controller is normal.~~

~~23. The device according to any one of claims 18 to 22, wherein the processor configures the non-BCCH carrier of the standby cell as a subset of non-BCCH carriers of the active cell.~~

~~24. The device according to any one of claims 17 to 23, wherein:~~

~~the active device and the standby device are connected by using a same core network, or the active device and the standby device are connected by using different core networks.~~

~~25~~14. A wireless communications system, characterized by comprising a base station and the device for dual network backup according to any one of claims 9 to ~~24~~13.