

Claims

1. A network optimization method based on a wearable device, comprising:

detecting whether the wearable device is in a ping-pong handover network environment;

if yes, monitoring a state of the wearable device, and obtaining state information of the wearable device; wherein the state information comprises call state information, data network state information, screen state information, and positioning information;

adjusting a network standard according to the state information; the network standard is a type of the data network by:

switching an initial network standard to a first network standard, when the call state information indicates that the wearable device is not in a call status and the data network state information indicates that the wearable device does not have a data service, wherein a duration time of the first network standard is based on a preset time attenuation gradient list, and a signal transmission rate of the original network standard is higher than a signal transmission rate of the first network standard;

recording adjustment information of the network standard; the adjustment information comprises adjustment time and adjustment effect indication information;

adjusting an adjustment parameter group related to the network standard of the wearable device dynamically according to the adjustment information and obtaining a target adjustment parameter group, so as to adjust the network standard according to the target adjustment parameter group.

2. The method according to claim 1, wherein, the detecting whether the wearable device is in a ping-pong handover network environment comprises:

obtaining an abnormal hold time index value for measuring the ping-pong handover network environment;

converting the abnormal hold time index value into a time data index value through a first preset algorithm;

when the time data index value is greater than a first preset time threshold value, monitoring a signal switching index value of a cell where the wearable device is located;

when the signal switching index value is equal to or greater than a preset signal switching index value, determining that the wearable device is in the ping-pong handover network environment; and

when the signal switching index value is smaller than the preset signal switching index value, determining that the wearable device is not in the ping-pong handover network environment.

3. The method according to claim 2, wherein when the positioning information indicates that a moving distance of the wearable device is greater than a preset distance value, switching the first network standard to an original network standard.

4. The method according to claim 2, further comprising:

obtaining a current signal strength when the wearable device is within a preset time period and the positioning information indicates that the wearable device has not moved within a second preset time threshold value;

determining whether the current signal strength is smaller than a preset signal strength;

if yes, turning off the data service, and when the wearable device is in a weak network environment and the screen state information indicates that the wearable device is in a screen-on state, turning on the data service;

if not, switching the original network standard to a second network standard, and when the wearable device is in the weak network environment and the screen state information indicates that the wearable device is not in the screen-on state and the wearable device is not within the preset time period, switching the second network standard to the original network standard; wherein the signal transmission rate of an original network standard is higher than a signal transmission rate of the second network standard.

5. The method according to any one of claims 1 to 4, wherein, the adjusting an adjustment parameter group related to the network standard of the wearable device dynamically

according to the adjustment information and obtaining a target adjustment parameter group, so as to adjust the network standard according to the target adjustment parameter group, comprises:

based on the adjustment information, adjusting the adjustment parameter group related to the network standard of the wearable device dynamically by using a second preset algorithm and an adjustment frequency determined according to a network environment of the wearable device and obtaining a target adjustment parameter group, so as to adjust the network standard according to the target adjustment parameter group.

6. A wearable device, comprising:

a detecting unit, configured to detect whether the wearable device is in a ping-pong handover network environment;

a state monitoring unit, configured to monitor a state of the wearable device, and obtain state information of the wearable device when the detecting unit detects that the wearable device is in the ping-pong handover network environment; wherein the state information comprises call state information, data network state information, screen state information, and positioning information;

an adjusting unit, configured to adjust a network standard according to the state information; the network standard is a type of the data network;

a recording unit, configured to record adjustment information of the network standard; the adjustment information comprises adjustment time and adjustment effect indication information;

a dynamic adjustment unit, configured to dynamically adjust an adjustment parameter group related to the network standard of the wearable device according to the adjustment information and obtain a target adjustment parameter group, so as to adjust the network standard according to the target adjustment parameter group.

7. The wearable device according to claim 6, wherein, the detecting unit comprises:

a first obtaining subunit, configured to obtain an abnormal hold time index value for measuring the ping-pong handover network environment;

a converting sub-unit, configured to convert the abnormal hold time index value into a time data index value through a first preset algorithm;

a monitoring sub-unit, configured to monitor a signal switching index value of a cell that the wearable device is located when the time data index value is greater than a first preset time value;

a determining sub-unit, configured to determine that the wearable device is in the ping-pong handover network environment when the signal switching index value is greater than or equal to a preset signal switching index value; and determine that the wearable device is not in the ping-pong handover network environment when the signal switching index value is smaller than the preset signal switching index value.

8. The wearable device according to claim 7, wherein, the adjusting unit comprises:

a first switching sub-unit, configured to, switch an initial network standard to a first network standard when the call state information indicates that the wearable device does not have a call and the data network state information indicates that the wearable device does not have a data service; a duration time of the first network standard is based on a preset time attenuation gradient list, and a signal transmission rate of the initial network standard is higher than a signal transmission rate of the first network standard; and switch the first network standard to the initial network standard when the positioning information indicates that a moving distance of the wearable device is greater than a preset distance value.

9. The wearable device according to claim 7, wherein, the adjusting unit further comprises:

a second obtaining sub-unit, configured to obtain a current signal strength when the wearable device is within a preset time period and the positioning information indicates that the wearable device has not moved within a second preset time value;

a determining sub-unit, configured to determine whether the current signal strength is smaller than a preset signal strength;

a data service sub-unit, configured to turn off the data service when the determining subunit determines that the current signal strength is smaller than the preset signal strength, and

turn on the data service when the wearable device is in a weak network environment and the screen state information indicates that the wearable device is in a screen-on state;

a second switching sub-unit, configured to switch the initial network standard to a second network standard when the determining subunit determines that the current signal strength is greater than or equal to the preset signal strength, and switch the second network standard to the initial network standard when the wearable device is in the weak network environment and the screen state information indicates that the wearable device is not in the screen-on state and the wearable device is not within the preset time period ; wherein, the signal transmission rate of the initial network standard is higher than a signal transmission rate of the second network standard.

10. The wearable device according to any one of claims 6 to 9, wherein, the adjusting unit is configured to adjust an adjustment parameter group related to the network standard of the wearable device dynamically according to the adjustment information and obtain a target adjustment parameter group, so as to adjust the network standard according to the target adjustment parameter group, specifically is:

the dynamic adjustment unit is configured to, based on the adjustment information, adjust the adjustment parameter group related to the network standard of the wearable device dynamically by using a second preset algorithm and an adjustment frequency determined according to a network environment of the wearable device and obtain a target adjustment parameter group, so as to adjust the network standard according to the target adjustment parameter group.

11. A wearable device, comprising:

a memory having executable program codes stored therein;

a processor coupled to the memory;

the processor invokes the executable program codes stored in the memory to perform the network optimization method based on a wearable device according to any one of claims 1 to 5.

12. A computer readable storage medium, wherein the computer readable storage medium stores a computer program, and the computer program causes a computer to execute the network optimization method based on a wearable device according to any one of claims 1 to 5.