United States Patent Application Publication	20250267568
Kind Code	A1
Publication Date	August 21, 2025
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ACCESS POINT STEERING METHOD AND SYSTEM THEREOF

Abstract

An access point steering method includes performing a priority list generating step, a measuring requesting step, a determining step and a steering step. The priority list generating step includes selecting priority client from a plurality of clients. The measuring requesting step includes sending a measuring request to one of a plurality of access points, which is signally connected to the at least one priority client, and configuring the priority client to measure a signal strength value between an adjacent access point of the access points and the client. The determining step includes determining whether a connection determining condition of the adjacent access point is corresponding to a predetermined condition. The steering step includes steering the priority client to establish a connection with the adjacent access point when the connection determining condition is corresponding to the predetermined condition.

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Family ID: **1000008214257**

Appl. No.: **18/903027**

Filed: **October 01, 2024**

Foreign Application Priority Data

TW	113105432	Feb. 16, 2024

Publication Classification

Int. Cl.: **H04W48/20** (20090101); **H04W76/10** (20180101)

U.S. Cl.:

CPC **H04W48/20** (20130101); **H04W76/10** (20180201);

Background/Summary

RELATED APPLICATIONS

[0001] This application claims priority to Taiwan Application Serial Number 113105432, filed Feb. 16, 2024, which is herein incorporated by reference.

BACKGROUND

Technical Field

[0002] The present disclosure relates to a steering method and a system thereof. More particularly, the present disclosure relates to an access point steering method and a system thereof.

Description of Related Art

[0003] The conventional mobile electronic device connects to wireless network and transmits data. The mesh network includes a plurality of access points and clients (i.e., the mobile devices). In the steering mechanism of the mesh network structure, the controller configures the client to send a measuring request to an adjacent access point, while connecting the network, and determines a most suitable access point for the client according to a signal strength between the adjacent access point and the client. However, when the client is connected to a specific access point, the connection quality may change since the number of the clients connected to the access point or the position of the client changes.

[0004] Thus, developing an access point steering method and a system thereof, which can monitor the connecting condition of the network regularly and steer the client to connect with a best access point, are commercially desirable.

SUMMARY

[0005] According to one aspect of the present disclosure, an access point steering method includes performing a priority list generating step, a measuring requesting step, a determining step and a steering step. The priority list generating step includes configuring a controller to select at least one priority client from a plurality of clients according to a priority rule. The measuring requesting step includes configuring the controller to send a measuring request to one of a plurality of access points, which is signally connected to the at least one priority client, and configure the at least one priority client to measure a signal strength value between an adjacent access point of the access points and the at least one priority client. The determining step includes configuring the controller to determine whether a connection determining condition of the adjacent access point is corresponding to a predetermined condition. The connection determining condition includes the signal strength value. The steering step includes configuring the controller to steer the at least one priority client to establish a connection with the adjacent access point when the connection determining condition is corresponding to the predetermined condition.

[0006] According to another aspect of the present disclosure, an access point steering system includes a plurality of access points, a plurality of clients and a controller. The clients are signally connected to the access points. The controller is signally connected to the access points, and configured to implement an access point steering method. The access point steering method includes performing a priority list generating step, a measuring requesting step, a determining step and a steering step. The priority list generating step includes selecting at least one priority client from the clients according to a priority rule. The measuring requesting step includes sending a measuring request to one of the access points, which is signally connected to the at least one priority client, and configuring the at least one priority client to measure a signal strength value between an adjacent access point of the access points and the at least one priority client. The determining step includes determining whether a connection determining condition of the adjacent

access point is corresponding to a predetermined condition. The connection determining condition includes the signal strength value. The steering step includes steering the at least one priority client to establish a connection with the adjacent access point when the connection determining condition is corresponding to the predetermined condition.

Description

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] The present disclosure can be more fully understood by reading the following detailed description of the embodiment, with reference made to the accompanying drawings as follows:

[0008] FIG. **1** shows a schematic view of an access point steering system according to a first embodiment of the present disclosure.

[0009] FIG. **2** shows a flow chart of an access point steering method according to a second embodiment of the present disclosure.

[0010] FIG. **3** shows a schematic view of the measuring requesting step and the steering step of the access point steering method of FIG. **2**.

[0011] FIG. **4** shows a flow chart of an access point steering method according to a third embodiment of the present disclosure.

[0012] FIG. **5** shows a flow chart of the low priority level steering step of the access point steering method of FIG. **4**.

[0013] FIG. **6** shows a flow chart of the overload steering step of the access point steering method of FIG. **4**.

DETAILED DESCRIPTION

[0014] The embodiment will be described with the drawings. For clarity, some practical details will be described below. However, it should be noted that the present disclosure should not be limited by the practical details, that is, in some embodiment, the practical details is unnecessary. In addition, for simplifying the drawings, some conventional structures and elements will be simply illustrated, and repeated elements may be represented by the same labels.

[0015] It will be understood that when an element (or device) is referred to as be “connected to” another element, it can be directly connected to other element, or it can be indirectly connected to the other element, that is, intervening elements may be present. In contrast, when an element is referred to as be “directly connected to” another element, there are no intervening elements present. In addition, the terms first, second, third, etc. are used herein to describe various elements or components, these elements or components should not be limited by these terms. Consequently, a first element or component discussed below could be termed a second element or component.

[0016] Please refer to FIG. **1** and FIG. **2**. FIG. **1** shows a schematic view of an access point steering system **100** according to a first embodiment of the present disclosure. FIG. **2** shows a flow chart of an access point steering method S**100** according to a second embodiment of the present disclosure. The access point steering system **100** includes a plurality of access points N**1**, N**2**, N**3**, a plurality of clients U**1**, U**2**, U**3**, U**4**, a controller C**1** and a database D**1**. The clients U**1**, U**2**, U**3**, U**4** are signally connected to the access points N**1**, N**2**, N**3**. The controller C**1** is signally to the access points N**1**, N**2**, N**3**, and configured to implement the access point steering method S**100**. The access point steering method S**100** includes performing a priority list generating step S**01**, a measuring requesting step S**02**, a determining step S**03** and a steering step S**04**. The priority list generating step S**01** includes configuring the controller C**1** to select at least one priority client from the clients U**1**, U**2**, U**3**, U**4** according to a priority rule RE. The measuring requesting step S**02** includes configuring the controller C**1** to send a measuring request RQ (shown in FIG. **3**) to one of the access points N**1**, N**2**, N**3**, which is signally connected to the priority client, and configure the priority client to measure a signal strength value between an adjacent access point of the access

points N**1**, N**2**, N**3** and the priority client. The determining step S**03** includes configuring the controller C**1** to determine whether a connection determining condition of the adjacent access point is corresponding to a predetermined condition. The connection determining condition includes the signal strength value. The steering step S**04** includes configuring the controller C**1** to steer the priority client to establish a connection with the adjacent access point when the connection determining condition is corresponding to the predetermined condition.

[0017] In detail, the controller C**1** can be a controller of the mesh network structure, each of the access points N**1**, N**2**, N**3** can be an agent in the mesh network structure, the database D**1** includes a Random Access Memory (RAM) capable to store information and instruction for the controller C**1** to process or other dynamic storing device, each of the clients U**1**, U**2**, U**3**, U**4** can be laptop, cell phone, mobile device or other electronic device connected by wireless network, but the present disclosure is not limited thereto.

[0018] In FIG. **1**, the controller C**1** in the mesh network structure is signally connected to the database D**1**, the access point N**1** is signally connected to the controller C**1**, the access points N**2**, N**3** are signally connected to the controller C**1** via the access point N**1**, and signally connected to the network **10** via the controller C**1**. The client U**1** is connected to the access point N**1**, the client U**2** is connected to the access point N**2**, the clients U**3**, U**4** are connected to the access point N**3**. In the priority list generating step S**01**, the clients U**1**, U**2**, U**3**, U**4** are determined whether each of the clients U**1**, U**2**, U**3**, U**4** is at least one priority client (such as the client U**2**) with access point (the access points N**1**, N**2**, N**3**) switching requirement. If at least one of the clients U**1**, U**2**, U**3**, U**4** is the priority client corresponding to the priority rule RE, the measuring requesting step S**02** is executed. If none of the clients U**1**, U**2**, U**3**, U**4** is the at least one priority client corresponding to the priority rule RE, the step S**010** is executed to monitor the clients U**1**, U**2**, U**3**, U**4** regularly.

[0019] In other embodiment of the present disclosure, the priority list generating step can further include establishing a priority list or a steering exclusion list of the clients by a user manually. Moreover, when a number of the priority clients is huge, the priority list generating step can only monitor a part of the priority clients selectively, but the present disclosure is not limited thereto.

[0020] Please refer to FIG. **1** to FIG. **3**. FIG. **3** shows a schematic view of the measuring requesting step S**02** and the steering step S**04** of the access point steering method S**100** of FIG. **2**. In the measuring requesting step S**02**, the controller C**1** sends the measuring request RQ to the access point N**2**, and configure the priority client (the client U**2**) to measure a signal strength value between other adjacent access points (such as the access points N**1**, N**3**) and the priority client (the client U**2**) via the access point N**2**. After the signal strength values are measured, the access point N**2** transmit the signal strength values to the controller C**1** via a measuring response RS, and the signal strength values are stored into the database D**1**. In detail, the signal strength value can be a Receiving Signal Strength Indicator (RSSI) of an adjacent access point relative to the priority client, the measuring request RQ can be a Beacon Metrics Query, the measuring response RS can be a Beacon Metrics Response, but the present disclosure is not limited thereto.

[0021] In the determining step S**03**, the controller C**1** determine whether a connecting quality can be enhanced or not when the priority client is switched to connect with an adjacent access point according to the connection determining condition of the adjacent access point. The connection determining condition can further include a channel utilization and a hop count of the adjacent access point. For example, the connection determining condition can include a signal strength value greater than a predetermined strength value (such as −60 dBm) or a channel utilization of the access point N**1** is less than a predetermined value (such as 75%). The signal strength value greater than the predetermined strength value represents that the signal strength of the adjacent access point (such as the access point N**1**) relative to the priority client is good. The channel utilization of the access point N**1** less than the predetermined value represents that the access point N**1** is not overload, there are still sufficient frequency bandwidth can be provided to a priority client. When the signal strength values and the channel utilization of at least two adjacent access points are both

corresponding to the connection determining condition, the controller C**1** can further compare whether a hop count of the access point N**1** is less than a hop count between the access point N**2** and the controller C**1**, that is, a number of the repeater between the access point N**1** and the controller C**1** is less than a number of the repeater between the access point N**2** and the controller C**1**. In response to determining that the adjacent access point is corresponding to the predetermined condition, the steering step S**04** is executed, in response to determining that the adjacent access point does not corresponding to the predetermined condition, the priority client is not steered to switch to the access point N**1**.

[0022] Please refer to FIG. **3**, in the steering step S**04**, when an adjacent access point (such as the access point N**1**) is verified to be an access point N**1** which can provide better network connection quality to the priority client, the controller C**1** sends a steering request SQ to the access point N**2**, and the access point N**2** suggests the priority client switching the connection to connect the access point N**1**. The priority client can return a steering response SS to the controller C**1** via the access point N**2** to verify whether the priority client receives the suggestion to switch the connection to connect the access point N**1** or not. In the second embodiment, the steering request SQ can be a Client Steering Request, the steering response SS can be a Client Steering BTM Report, but the present disclosure is not limited thereto.

[0023] Please refer to FIG. **1**, FIG. **2** and FIG. **4**. FIG. **4** shows a flow chart of an access point steering method S**200** according to a third embodiment of the present disclosure. The access point steering method S**200** includes a priority list generating step S**01**, a measuring requesting step S**02**, a determining step S**03**, a steering step S**04**, a low priority level steering step S**05** and an overload steering step S**06**. In the third embodiment, the measuring requesting step S**02**, the determining step S**03** and the steering step S**04** are the same as the measuring requesting step S**02**, the determining step S**03** and the steering step S**04** in the access point steering method S**100** of the second embodiment, respectively, and will not be described again. Further, the access point steering method S**200** can further include the low priority level steering step S**05** and the overload steering step S**06**. The priority list generating step S**01** can further include a collecting step S**011**, a labeling step S**012** and a recording step S**013**.

[0024] Further, the access point steering method S**200** can further include steps S**014** and S**201**. The step S**014** includes determining whether any of the clients U**1**, U**2**, U**3**, U**4** is not priority client after the priority list generating step S**01** selected the priority client, and executing the low priority level steering step S**05** if the clients U**1**, U**2**, U**3**, U**4** are non-priority clients (the remaining clients U**1**, U**2**, U**3**, U**4** except for the priority client, hereafter, others of the clients). The step S**201** includes monitoring the clients U**1**, U**2**, U**3**, U**4** and the access points N**1**, N**2**, N**3**. When the monitored device is one of the clients U**1**, U**2**, U**3**, U**4**, the priority list generating step S**01** is executed. When the monitored device is one of the access points N**1**, N**2**, N**3**, the overload steering step S**06** is executed.

[0025] In detail, the priority rule RE includes dividing the clients U**1**, U**2**, U**3**, U**4** into a plurality of priority levels according to an application category used by each of the clients U**1**, U**2**, U**3**, U**4** currently, and when at least one of the clients U**1**, U**2**, U**3**, U**4** (such as the client U**1**) is corresponding to a first priority level of the priority levels, the client U**1** is the priority client. The priority rule RE can divide the different application categories into many priority levels according to the data transmitting characteristic of the applications. For instance, the first priority level can include game programs, meeting programs or other applications, which need to transmit the data immediately. The second priority level can include multimedia audiovisual applications or other streaming serving applications with immediacy requirement lower than the first priority level. The third priority level can include data downloading or webpage browsing, but the present disclosure is not limited thereto.

[0026] Moreover, the priority list generating step S**01** can further establish a connection between the client U**1** and an adjacent access point with great network connecting quality before the client

U**1** is selected as a priority client according to a time interval when the client U**1** used an application in the first priority level in a time interval regularly by the collecting step S**011**, the labeling step S**012** and the recording step S**013**. Thereby, ensuring the client U**1** to transmit the data without being affected by switching between the access points N**1**, N**2**, N**3** while utilizing the application in the first priority level.

[0027] The collecting step S**011** includes configuring the controller C**1** to collect a plurality of immediate internet usage information of the clients U**1**, U**2**, U**3**, U**4**. Each of the immediate internet usage information includes at least one of the application category, a packet information and a network traffic. The labeling step S**012** includes configuring the controller C**1** to label the priority levels, which are corresponding to a plurality of time intervals, of the clients U**1**, U**2**, U**3**, U**4** according to the immediate internet usage information. The recording step S**013** includes configuring the controller C**1** to record a specific time interval corresponding to the first priority level of the at least one of the clients U**1**, U**2**, U**3**, U**4**, and execute the steering step S**04** before the specific time interval.

[0028] In other words, the collecting step S**011** is performed to collect the applications, packet information and the network traffics, which are used by the clients U**1**, U**2**, U**3**, U**4** in different time points. The labeling step S**012** is performed to label the corresponding priority level according to the application categories using by the clients U**1**, U**2**, U**3**, U**4** in different time points. The recording step S**013** is performed to record the specific time interval when the clients U**1**, U**2**, U**3**, U**4** using the application corresponding to the first priority level, and execute the steering step S**04** to the clients U**1**, U**2**, U**3**, U**4** before the specific time interval. Due to the priority client may only using an application with an application category corresponding to the first priority level in the specific timer interval, hence, when the network using behaviors of the clients U**1**, U**2**, U**3**, U**4** are regular, the applications corresponding to the first priority level are used in the specific interval, the access point steering method S**200** of the present disclosure can ensure the network connecting quality of the clients U**1**, U**2**, U**3**, U**4** by the collecting step S**011**, the labeling step S**012** and the recording step S**013** before the specific time interval.

[0029] Please refer to FIG. **1**, FIG. **4** and FIG. **5**. FIG. **5** shows a flow chart of the low priority level steering step S**05** of the access point steering method S**200** of FIG. **4**. The low priority level steering step S**05** includes a condition determining sub-step S**051**, a searching sub-step S**052**, a measuring sub-step S**053**, a determining sub-step S**054**, a steering sub-step S**055** and a channel switching sub-step S**056**. The condition determining sub-step S**051** includes configuring the controller C**1** to determine whether each of the clients U**1**, U**2**, U**3**, U**4** is corresponding to a low priority level steering condition (the conditions will be described below). The searching sub-step S**052** includes configuring the controller C**1** to search another adjacent access point (such as one of the access points N**1**, N**2**, N**3**). A channel utilization of the adjacent access point (such as the access point N**3**) is less than a predetermined value. The measuring sub-step S**053** includes configuring the controller C**1** to send another measuring request RQ to each of the others of the clients U**1**, U**2**, U**3**, U**4**, and configure each of the others of the clients U**1**, U**2**, U**3**, U**4** to measure the signal strength values between the clients U**1**, U**2**, U**3**, U**4** and other adjacent access points. The steering sub-step S**055** includes configuring the controller C**1** to steer at least one of the others of the clients U**1**, U**2**, U**3**, U**4** to establish another connection with the another adjacent access point when the signal strength value of the another adjacent access point is greater than a signal strength value of the others of the access points N**1**, N**2**, N**3**, which is signally connected to each of the others of the clients U**1**, U**2**, U**3**, U**4**.

[0030] For example, the low priority level steering step S**05** can be configured to monitor the network connecting quality of the non-priority clients of the clients U**1**, U**2**, U**3**, U**4**. In FIG. **5**, the condition determining sub-step S**051** is performed to determine whether any of the clients U**1**, U**2**, U**3**, U**4** is corresponding to the low priority level steering condition. If any of the clients U**1**, U**2**, U**3**, U**4** is corresponding to the low priority level steering condition, the searching sub-step S**052** is

executed. If none of the clients U**1**, U**2**, U**3**, U**4** is corresponding to the low priority level steering condition, the step S**050** is executed to monitor the clients U**1**, U**2**, U**3**, U**4** regularly.

[0031] In the searching sub-step S**052**, the controller C**1** is performed to search whether there are other adjacent access points (such as the access points N**1**, N**3**) surrounding the non-priority client (such as the client U**2**) in the clients U**1**, U**2**, U**3**, U**4**, and the channel utilization of one the other adjacent access points N**1**, N**3** is less than the predetermined value. If the result of the searching sub-step S**052** is yes, the measuring sub-step S**053** is executed, if the result of the searching sub-step S**052** is no, the channel switching sub-step S**056** is executed. The measuring sub-step S**053** is performed to configure the controller C**1** to send a measuring request RQ to the client U**2** via the access point N**2**, configure the client U**2** to measure the signal strength values of the access points N**1**, N**3**, and execute the determining sub-step S**054**. The determining sub-step S**054** is performed to determine whether the signal strength values of the access points N**1**, N**3** measured by the measuring sub-step S**053** are greater than a signal strength value of the access point N**2**, which is connected to the client U**2** currently. If the result of the determining sub-step S**054** is yes, the steering sub-step S**055** is executed, if the result of the determining sub-step S**054** is no, the client U**2** is not steered to switch the connected access point N**2**. In the determining sub-step S**054**, when the signal strength values of the access points N**1**, N**3** are both greater than the signal strength value of the access point N**2** measured by the measuring sub-step S**053**, the controller C**1** can select one of the access points N**1**, N**3**, which has a better signal strength value, to execute the steering sub-step S**055**.

[0032] In other embodiments of the present disclosure, when the signal strength value of the access point N**3** measured by the measuring sub-step S**053** is slightly greater than the signal strength value of the access point N**2**, which is connected to the client U**2** currently, the steering sub-step S**055** is executed. When the signal strength value of the access point N**3** measured by the measuring sub-step S**053** is at least 10 dB more than the signal strength value of the access point N**2**, which is connected to the client U**2** currently, a better network connecting quality can be ensured after the client U**2** establish a connection with the access point N**3**.

[0033] The channel switching sub-step S**056** includes configuring the controller C**1** to steer the client U**2** to switch from a channel of the access point N**2**, which is connected to the client U**2**, to another channel when the channel utilization of the adjacent access point (the access point N**3**) is greater than or equal to the predetermined value. In other words, when the access point N**3** near the client U**2** is overload, the channel switching sub-step S**056** does not steer the client to switch the connected access point N**2**, but steer the client to change the connected channel. If the client U**2** is connected to a 5G frequency band of the access point N**2**, the client U**2** can be steered to connect to a 2.4G frequency band of the access point N**2**.

[0034] In detail, the low priority level steering condition can include the client U**2** is not the at least one priority client and the signal strength value of the access point N**2**, which is connected to the client U**2**, is less than a predetermined strength value. Thus, when the client U**2** moves away from the original access point N**2** and leads to the network connecting quality decreased, the low priority level steering step S**05** of the access point steering method S**200** of the present disclosure can verify whether to adjust the connecting access point N**2** to increase the network connecting quality according to the aforementioned condition.

[0035] Please refer to FIG. **1**, FIG. **4** and FIG. **6**. FIG. **6** shows a flow chart of the overload steering step S**06** of the access point steering method S**200** of FIG. **4**. The overload steering step S**06** can include an overload determining sub-step S**061**, a selecting sub-step S**062**, a measuring sub-step S**063**, a determining sub-step S**064** and a steering sub-step S**065**. The overload determining sub-step S**061** includes configuring the controller C**1** to determine whether a channel utilization of one of the access points N**1**, N**2**, N**3** (such as the access point N**3**) is greater than a predetermined value. The selecting sub-step S**062** includes configuring the controller C**1** to select a low priority client (the client U**3**) from the clients U**3**, U**4**, which are connected to the access point N**3**, according to

the priority rule RE. The measuring sub-step S**063** includes configuring the controller C**1** to send another measuring request RQ to the low priority client (the client U**3**) via the access point N**3**, and configure the low priority client (the client U**3**) to measure a signal strength value of another adjacent access point (such as the access point N**2**). The determining sub-step S**064** includes configuring the controller C**1** to determine whether another connection determining condition of the another adjacent access point (the access point N**2**) is corresponding to another predetermined condition. The connection determining condition includes the signal strength value of the adjacent access point. The steering sub-step S**065** includes configuring the controller C**1** to steer the low priority client to establish another connection with the another adjacent access point (the access point N**2**) when the another adjacent access point is corresponding to the predetermined condition.
[0036] In other words, the overload steering step S**06** can determine whether any of the access points N**1**, N**2**, N**3** (such as the access point N**3**) are overload, and steer the clients U**3**, U**4**, which are connected to the access point N**3**, to establish the connection with other neighboring access points N**1**, N**2** when the access point N**3** is overload. The overload determining sub-step S**061** is performed to determine whether the channel utilization of the access point N**3** is overload, and execute the selecting sub-step S**062** when the access point N**3** is overload. The selecting sub-step S**062** is performed to verify whether the clients U**3**, U**4**, which are connected to the access point N**3**, are corresponding to the second priority level or the third priority level. If the priority level of the client U**3** is the third priority level, the client U**3** is determined as a low priority client. The measuring sub-step S**063** is performed to configure the controller C**1** to send the measuring request RQ to the client U**3** via the access point N**3** to configure the client U**3** measuring the signal strength values of the other access points N**2**, N**3**. The determining sub-step S**064** is performed to determine whether the signal strength values of the neighboring access points N**1**, N**2** are greater than the predetermined strength value, and the channel utilization of the access points N**1**, N**2** are less than a predetermined value. If one of the access points N**1**, N**2** is corresponding to the aforementioned predetermined condition, the steering sub-step S**065** is executed, if both of the access points N**1**, N**2** are not corresponding to the aforementioned condition, the client U**3** is not steered to establish a connection with the access points N**1**, N**2**.
[0037] It should be mentioned that, a frequency of the controller C**1** sending the measuring request RQ to the access points N**1**, N**2**, N**3** should be less than a predetermined frequency to avoid measuring the signal strength values between the clients U**1**, U**2**, U**3**, U**4** and the access points N**1**, N**2**, N**3** too often.
[0038] Thus, the access point steering method S**200** can monitor the priority client, the low priority client and the access points N**1**, N**2**, N**3** to ensure all the access points has the best connecting quality.
[0039] According to the aforementioned embodiments and examples, the advantages of the present disclosure are described as follows. [0040] 1. When the network using behaviors of the clients are regular, the applications corresponding to the first priority level are used in the specific interval, and the access point steering method of the present disclosure can ensure the network connecting quality of the clients by the collecting step, the labeling step, the recording step before the specific time interval. [0041] 2. When the client moves and being away from the original access point and lead to the network connecting quality decreased, the access point steering method of the present disclosure can verify whether to adjust the connecting access point to increase the network connecting quality according to the aforementioned condition. [0042] 3. The access point steering method can monitor the priority client, the low priority client and the access points to ensure all the access points has the best connecting quality.
[0043] Although the present disclosure has been described in considerable detail with reference to certain embodiments thereof, other embodiments are possible. Therefore, the spirit and scope of the appended claims should not be limited to the description of the embodiments contained herein.
[0044] It will be apparent to those skilled in the art that various modifications and variations can be

made to the structure of the present disclosure without departing from the scope or spirit of the disclosure. In view of the foregoing, it is intended that the present disclosure cover modifications and variations of this disclosure provided they fall within the scope of the following claims.

Claims

1. An access point steering method, comprising: performing a priority list generating step comprising configuring a controller to select at least one priority client from a plurality of clients according to a priority rule; performing a measuring requesting step comprising configuring the controller to send a measuring request to one of a plurality of access points, which is signally connected to the at least one priority client, and configure the at least one priority client to measure a signal strength value between an adjacent access point of the access points and the at least one priority client; performing a determining step comprising configuring the controller to determine whether a connection determining condition of the adjacent access point is corresponding to a predetermined condition, wherein the connection determining condition comprises the signal strength value; and performing a steering step comprising configuring the controller to steer the at least one priority client to establish a connection with the adjacent access point when the connection determining condition is corresponding to the predetermined condition.
2. The access point steering method of claim 1, wherein the priority rule comprises dividing the clients into a plurality of priority levels according to an application category used by each of the clients currently, and when at least one of the clients is corresponding to a first priority level of the priority levels, the at least one of the clients is the at least one priority client.
3. The access point steering method of claim 2, wherein the priority list generating step further comprises: performing a collecting step comprising configuring the controller to collect a plurality of immediate internet usage information of the clients, wherein each of the immediate internet usage information comprises at least one of the application category, a packet information and a network traffic of each of the clients; performing a labeling step comprising configuring the controller to label the priority levels, which are corresponding to a plurality of time intervals, of the clients according to the immediate internet usage information; and performing a recording step comprising configuring the controller to record a specific time interval corresponding to the first priority level of the at least one of the clients, and execute the steering step before the specific time interval.
4. The access point steering method of claim 1, wherein the connection determining condition further comprises a channel utilization and a hop count of the adjacent access point.
5. The access point steering method of claim 1, further comprising: performing a low priority level steering step, comprising: performing a condition determining sub-step comprising configuring the controller to determine whether each of the clients is corresponding to a low priority level steering condition; performing a searching sub-step comprising configuring the controller to search another adjacent access point, wherein a channel utilization of the another adjacent access point is less than a predetermined value; performing a measuring sub-step comprising configuring the controller to send another measuring request to each of others of the clients, and configure each of the others of the clients to measure a signal strength value of the another adjacent access point; performing a steering sub-step comprising configuring the controller to steer at least one of the others of the clients to establish another connection with the another adjacent access point when the signal strength value of the another adjacent access point is greater than a signal strength value of another of the access points, which is signally connected to each of the others of the clients.
6. The access point steering method of claim 5, wherein the low priority level steering condition comprises: each of the others of the clients is not the at least one priority client; and the signal strength value of the another of the access points, which is connected to each of the others of the clients, is less than a predetermined strength value.

7. The access point steering method of claim 5, wherein the low priority level steering step further comprises: performing a channel switching sub-step comprising configuring the controller to steer the at least one of the others of the clients to switch from a channel of the another of the access points, which is connected to the at least one of the others of the clients, to another channel when the channel utilization of the another adjacent access point is greater than the predetermined value.
8. The access point steering method of claim 1, further comprising: performing an overload steering step, comprising: performing an overload determining sub-step comprising configuring the controller to determine whether a channel utilization of each of the access points is greater than a predetermined value; performing a selecting sub-step comprising configuring the controller to select a low priority client from the clients, which are connected to each of the access points, according to the priority rule; performing a measuring sub-step comprising configuring the controller to send another measuring request to the low priority client, and configure the low priority client to measure a signal strength value of another adjacent access point; performing a determining sub-step comprising configuring the controller to determine whether another connection determining condition of the another adjacent access point is corresponding to another predetermined condition, wherein the another connection determining condition comprises the signal strength value of the another adjacent access point; and performing a steering sub-step comprising configuring the controller to steer the low priority client to establish another connection with the another adjacent access point when the another adjacent access point is corresponding to the another predetermined condition.
9. The access point steering method of claim 8, wherein the another connection determining condition further comprises a channel utilization of the another adjacent access point.
10. An access point steering system, comprising: a plurality of access points; a plurality of clients signally connected to the access points; and a controller signally connected to the access points, and configured to implement an access point steering method comprising: performing a priority list generating step comprises selecting at least one priority client from the clients according to a priority rule; performing a measuring requesting step comprising sending a measuring request to one of the access points, which is signally connected to the at least one priority client, and configuring the at least one priority client to measure a signal strength value between an adjacent access point of the access points and the at least one priority client; performing a determining step comprising determining whether a connection determining condition of the adjacent access point is corresponding to a predetermined condition, wherein the connection determining condition comprises the signal strength value; and performing a steering step comprising steering the at least one priority client to establish a connection with the adjacent access point when the connection determining condition is corresponding to the predetermined condition.
11. The access point steering system of claim 10, wherein the priority rule comprises dividing the clients into a plurality of priority levels according to an application category used by each of the clients currently, and when at least one of the clients is corresponding to a first priority level of the priority levels, the at least one of the clients is the at least one priority client.
12. The access point steering system of claim 11, wherein the priority list generating step further comprises: performing a collecting step comprising collecting a plurality of immediate internet usage information of the clients, wherein each of the immediate internet usage information comprises at least one of the application category, a packet information and a network traffic of each of the clients; performing a labeling step comprising labeling the priority levels, which are corresponding to a plurality of time intervals, of the clients according to the immediate internet usage information; and performing a recording step comprising recording a specific time interval corresponding to the first priority level of the at least one of the clients, and executing the steering step before the specific time interval.
13. The access point steering system of claim 10, wherein the connection determining condition further comprises a channel utilization and a hop count.

14. The access point steering system of claim 10, wherein the controller is configured to implement the access point steering method further comprising: performing a low priority level steering step, comprising: performing a condition determining sub-step comprising determining whether each of the clients is corresponding to a low priority level steering condition; performing a searching sub-step comprising searching another adjacent access point, wherein a channel utilization of the another adjacent access point is less than a predetermined value; performing a measuring sub-step comprising sending another measuring request to each of others of the clients, and configuring each of the others of the clients to measure a signal strength value of the another adjacent access point; performing a steering sub-step comprising steering at least one of the others of the clients to establish another connection with the another adjacent access point when the signal strength value of the another adjacent access point is greater than a signal strength value of another of the access points, which is signally connected to each of the others of the clients.

15. The access point steering system of claim 14, wherein the low priority level steering condition comprises: each of the others of the clients is not the at least one priority client; and the signal strength value of the another of the access points, which is connected to each of the others of the clients, is less than a predetermined strength value.

16. The access point steering system of claim 14, wherein the low priority level steering step further comprises: performing a channel switching sub-step comprising steering the at least one of the others of the clients to switch from a channel of the another of the access points, which is connected to the at least one of the others of the clients, to another channel when the channel utilization of the another adjacent access point is greater than the predetermined value.

17. The access point steering system of claim 10, wherein the controller is configured to implement the access point steering method further comprising: performing an overload steering step, comprising: performing an overload determining sub-step comprising determining whether a channel utilization of each of the access points is greater than a predetermined value; performing a selecting sub-step comprising selecting a low priority client from the clients, which are connected to each of the access points, according to the priority rule; performing a measuring sub-step comprising sending another measuring request to the low priority client, and configuring the low priority client to measure a signal strength value of another adjacent access point; performing a determining sub-step comprising determining whether another connection determining condition of the another adjacent access point is corresponding to another predetermined condition, wherein the another connection determining condition comprises the signal strength value of the another adjacent access point; and performing a steering sub-step comprising steering the low priority client to establish another connection with the another adjacent access point when the another adjacent access point is corresponding to the another predetermined condition.

18. The access point steering system of claim 17, wherein the another connection determining condition further comprises a channel utilization of the another adjacent access point.