a user importance level of the user equipment, where the user importance level may be a gold user, or, a silver user, or a bronze user; or,

a traffic class TC of the user equipment, where the traffic class is a streaming service, or, an interaction service, or, a background service, or, a session service; or,

data throughput of the user equipment; or,

at least one kind of link quality indicator, where the link quality indicator includes a common pilot channel CPICH ratio of energy per chip to the total noise power density Ec/N0, or, common pilot channel CPICH received signal code power RSCP, or, pathloss Pathloss, or, a block error rate BLER, or, a signal to interference ratio SIR.

In a sixth possible implementation manner of the first aspect, the determining, according to at least one kind of call control information of the user equipment, whether the user equipment meets a condition of stopping data receiving and sending includes: performing weighted averaging according to the at least one kind of call control information of the user equipment and a weight of the call control information of the user equipment to obtain comprehensive call control information; and determining, according to the comprehensive call control information, that the user equipment meets the condition of stopping data receiving and sending.

With reference to the sixth possible implementation manner of the first aspect, in a seventh possible implementation manner of the first aspect, the determining, according to the comprehensive call control information, whether the user equipment meets the condition of stopping data receiving and sending includes determining, according to a comparison result between the comprehensive call control information and a preset threshold, whether the user equipment meets the condition of stopping data receiving and sending.

With reference to the sixth possible implementation manner of the first aspect, in an eighth possible implementation manner of the first aspect, the determining, according to the comprehensive call control information, whether the user equipment meets the condition of stopping data receiving and sending includes sequencing the comprehensive call control information of the user equipment and comprehensive call control information of at least one other user equipment; and determining, according to sequencing information of the comprehensive call control information of the user equipment, whether the user equipment meets the condition of stopping data receiving and sending.

In a ninth possible implementation manner of the first aspect, the method further includes: determining whether the at least one radio bearer of the user equipment has been stopped; if it is determined that the radio network providing a service for the user equipment is not congested and it is determined that the at least one radio bearer of the user equipment has been stopped, sending the first message, where the first message includes information for instructing the user equipment to

a traffic handling priority THP of the user equipment; or,

a user importance level of the user equipment, where the user importance level may be a gold user, or, a silver user, or a bronze user; or,

a traffic class TC of the user equipment, where the traffic class is a streaming service, or, an interaction service, or, a background service, or, a session service; or,

data throughput of the user equipment; or,

at least one kind of link quality indicator, where the link quality indicator includes a common pilot channel CPICH ratio of energy per chip to the total noise power density Ec/N0, or, common pilot channel CPICH received signal code power RSCP, or, pathloss Pathloss, or, a block error rate BLER, or, a signal to interference ratio SIR.

In a sixth possible implementation manner of the third aspect, the second determining unit includes:

a control weighting module, configured to perform weighted averaging according to the at least one kind of call control information of the user equipment and a weight of the control rule to obtain comprehensive call control information; and

a control determining module, configured to determine, according to the comprehensive call control information obtained by the control weighting module, whether the user equipment meets the condition of stopping data receiving and sending.

In a seventh possible implementation manner of the third aspect, the control determining module is specifically configured to:

determine, according to a comparison result between the comprehensive call control information and a preset threshold, whether the user equipment meets the condition of stopping data receiving and sending.

In an eighth possible implementation manner of the third aspect, the control determining module is specifically configured to:

sequence the comprehensive call control information of the user equipment and comprehensive call control information of at least one other user equipment; and

determine, according to sequencing information of the comprehensive call control information of the user equipment, whether the user equipment meets the condition of stopping data receiving and sending.

In a ninth possible implementation manner of the third aspect, the radio access network device further includes:

a third determining unit, configured to determine whether the at least one radio bearer of the user equipment has been stopped; where

the sending unit is further configured to send the first message when the first determining unit

The foregoing only provides exemplary embodiments of the technical solutions of the present invention, instead of limiting the protection scope of the present invention. Any modification, equivalent replacement, or improvement made within the principle of the present invention shall fall within the protection scope of the present invention.

CLAIMS

1. A radio bearer control method, comprising:

determining, by a radio access network device, according to use information of at least one kind of resource, whether a radio network providing a service for a user equipment is congested;

determining, by the radio access network device, according to at least one kind of call control information of the user equipment, whether the user equipment meets a condition of stopping data receiving and sending; and

if it is determined that the radio network providing a service for the user equipment is congested and it is determined that the user equipment meets the condition of stopping data receiving and sending, sending, by the radio access network device, a first message, wherein the first message comprises information for instructing the user equipment to stop at least one radio bearer, wherein the radio bearer is a traffic radio bearer, TRB, or a signaling radio bearer, SRB.

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

radio bearer reconfiguration; or,

cell update confirm; or,

radio bearer release; or,

radio bearer setup.

3. The method according to claim 1, wherein the information for instructing the user equipment to stop at least one radio bearer indicates that a radio bearer stop/continue attribute of the at least one radio bearer is stop.

4. The method according to claim 1, wherein the resource comprises: a power resource; or, a channel processing unit, CE, resource; or, a code resource; or, an Iub interface transmission bandwidth resource; or, a signaling processing unit, SPU, resource; or, a forward access channel, FACH, resource; or, a paging channel, PCH, resource; or, a non-high speed packet access service R99 resource; or, a high speed packet access service, HSPA, resource; or, a circuit service, CS, resource; or, a packet service, PS, resource; and

the use information of the resource comprises: a usage rate of the resource; or, a used quantity of the resource; or, an available quantity of the resource; or, an admission rejection probability of the resource; or, a congestion probability of the resource; or, a congestion level of the resource; or, a congestion state of the resource.

5. The method according to claim 1, wherein the determining, by a radio access network device, according to use information of at least one kind of resource, whether a radio network is congested

comprises:

performing, by the radio access network device, weighted averaging according to the use information of the at least one kind of resource and a weight of the resource to obtain comprehensive resource use information; and

determining, by the radio access network device, according to the comprehensive resource use information and a congestion threshold, whether the radio network providing a service for the user equipment is congested.

6. The method according to claim 1, wherein the call control information of the user equipment comprises:

a connection state of the user equipment, wherein the connection state comprises a cell dedicated channel, CELL_DCH, state, or, a cell forward access channel, CELL_FACH, state, or, a cell paging channel, CELL_PCH, state, or, a UTRAN registration area paging channel, URA_PCH, state; or,

a service connection phase of the user equipment, wherein the service connection phase comprises an RRC setup phase, or, an RRC phase, or, a RAB setup phase, or, a RAB phase; or,

a handover state of the user equipment, wherein the handover state comprises a soft handover state, or, a non-soft handover state; or,

an allocation retention priority, ARP, of the user equipment; or,

a traffic handling priority, THP, of the user equipment; or,

a user importance level of the user equipment, wherein the user importance level may be a gold user, or, a silver user, or a bronze user; or,

a traffic class, TC, of the user equipment, wherein the traffic class is a streaming service, or, an interaction service, or, a background service, or, a session service; or,

data throughput of the user equipment; or,

at least one kind of link quality indicator, wherein the link quality indicator comprises a common pilot channel, CPICH, ratio of energy per chip to the total noise power density, Ec/N0, or, common pilot channel, CPICH, received signal code power, RSCP, or, pathloss, or, a block error rate, BLER, or, a signal to interference ratio, SIR.

7. The method according to claim 1, wherein the determining, by the radio access network device, according to at least one kind of call control information of the user equipment, whether the user equipment meets a condition of stopping data receiving and sending comprises:

performing, by the radio access network device, weighted averaging according to the at least one kind of call control information of the user equipment and a weight of the call control information of the user equipment to obtain comprehensive call control information; and

determining, by the radio access network device, according to the comprehensive call control information, whether the user equipment meets the condition of stopping data receiving and sending.

8. A radio access network device, comprising:

a first determining unit, configured to determine, according to use information of at least one kind of resource, whether a radio network providing a service for a user equipment is congested;

a second determining unit, configured to determine, according to at least one kind of call control information of the user equipment, whether the user equipment meets a condition of stopping data receiving and sending; and

a sending unit, configured to send a first message when the first determining unit determines that the radio network providing a service for the user equipment is congested and the second determining unit determines that the user equipment meets the condition of stopping data receiving and sending, wherein the first message comprises information for instructing the user equipment to stop at least one radio bearer, wherein the radio bearer is a traffic radio bearer, TRB, or a signaling radio bearer, SRB.

9. The radio access network device according to claim 8, wherein the first message comprises:

radio bearer reconfiguration; or,

cell update confirm; or,

radio bearer release; or,

radio bearer setup.

10. The radio access network device according to claim 8, wherein the information for instructing the user equipment to stop at least one radio bearer indicates that a radio bearer stop/continue attribute of the at least one radio bearer is stop.

11. The radio access network device according to claim 8, wherein the resource comprises: a power resource; or, a channel processing unit, CE, resource; or, a code resource; or, an Iub interface transmission bandwidth resource; or, a signaling processing unit, SPU, resource; or, a forward access channel, FACH, resource; or, a paging channel, PCH, resource; or, a non-high speed packet access service R99 resource; or, a high speed packet access service, HSPA, resource; or, a circuit service, CS, resource; or, a packet service, PS, resource; and

the use information of the resource comprises: a usage rate of the resource; or, a used quantity of the resource; or, an available quantity of the resource; or, an admission rejection probability of the resource; or, a congestion probability of the resource; or, a congestion level of the resource; or, a congestion state of the resource.

12. The radio access network device according to claim 8, wherein the first determining unit comprises:

a resource weighting module, configured to perform weighted averaging according to the use information of the at least one kind of resource and a weight of the resource to obtain comprehensive

resource use information; and

a congestion determining module, configured to determine, according to the comprehensive resource use information obtained by the resource weighting module and a congestion threshold, whether the radio network providing a service for the user equipment is congested.

13. The radio access network device according to claim 8, wherein the call control information of the user equipment comprises:

a connection state of the user equipment, wherein the connection state comprises a cell dedicated channel, CELL_DCH, state, or, a cell forward access channel, CELL_FACH, state, or, a cell paging channel, CELL_PCH, state, or, a UTRAN registration area paging channel, URA_PCH, state; or,

a service connection phase of the user equipment, wherein the service connection phase comprises an RRC setup phase, or, an RRC phase, or, a RAB setup phase, or, a RAB phase; or,

a handover state of the user equipment, wherein the handover state comprises a soft handover state, or, a non-soft handover state; or,

an allocation retention priority, ARP, of the user equipment; or,

a traffic handling priority, THP, of the user equipment; or,

a user importance level of the user equipment, wherein the user importance level may be a gold user, or, a silver user, or a bronze user; or,

a traffic class, TC, of the user equipment, wherein the traffic class is a streaming service, or, an interaction service, or, a background service, or, a session service; or,

data throughput of the user equipment; or,

at least one kind of link quality indicator, wherein the link quality indicator comprises a common pilot channel, CPICH, ratio of energy per chip to the total noise power density, Ec/N0, or, common pilot channel, CPICH, received signal code power, RSCP, or, pathloss, or, a block error rate, BLER, or, a signal to interference ratio, SIR.

14. The radio access network device according to claim 8, wherein the second determining unit comprises:

a control weighting module, configured to perform weighted averaging according to the at least one kind of call control information of the user equipment and a weight of the control rule to obtain comprehensive call control information; and

a control determining module, configured to determine, according to the comprehensive call control information obtained by the control weighting module, whether the user equipment meets the condition of stopping data receiving and sending.