CLAIMS

1. A wireless communication method, comprising:

sending, by a terminal device, a first message to an access network device, wherein the first message carries at least one of first capability information or first function parameter information, the first capability information is used for indicating the access network device that a maximum communication capability of the terminal device is needed to be updated into a first communication capability, and the first function parameter information is used for indicating the access network device that a function parameter of the terminal device for communication is needed to be updated into a first function parameter, or a value range of the function parameter of the terminal device for communication is needed to be updated into a first value range of the function parameter; and

receiving, by the terminal device, a second message from the access network device, wherein the second message carries the function parameter or the value range of the function parameter configured for the terminal device by the access network device according to the at least one of the first capability information or the first function parameter information;

wherein the maximum communication capability of the terminal device comprises: a maximum number of antennas supported for Multiple Input Multiple Output (MIMO) communication; and

wherein the function parameter or the value range of the function parameter of the terminal device for communication comprises: a number or number range of antennas for MIMO communication.

2. The method of claim 1, before sending, by the terminal device, the first message to the access network device, comprising:

determining, by the terminal device, according to a present condition of the terminal device, at least one of the first communication capability or the first function parameter,

or,

determining, by the terminal device, according to the present condition of the terminal device, at least one of the first communication capability or the first value

range of the function parameter.

3. The method of any one of claims 1-2, before sending, by the terminal device, the first message to the access network device, further comprising:

sending, by the terminal device, a third message to the access network device, wherein the third message carries second capability information, and the second capability information used for indicating a maximum communication capability of the terminal device,

wherein the first capability information is used for indicating the maximum communication capability indicated by the second capability information is needed to be updated into the first communication capability, and the first function parameter information is used for indicating that the function parameter configured for the terminal device by the access network device according to the maximum communication capability is needed to be updated into the first function parameter, or that the value range of the function parameter configured for the terminal device by the access network device according to the maximum communication capability is needed to be updated into the first value range of the function parameter.

4. The method of any one of claims 1-3, before sending, by the terminal device, the first message to the access network device, further comprising:

receiving, by the terminal device, a fifth message from the access network device, wherein the fifth message used for indicating at least one of: a communication capability supported by the access network device, a function parameter supported by the access network device, or a value range of the function parameter supported by the access network device; and

determining at least one of: the first communication capability, the first function parameter, or the first value range of the function parameter, according to at least one of: the communication capability supported by the access network device, the function parameter supported by the access network device, or the value range of the function parameter supported by the access network device.

5. The method of claim 3 or 4, wherein the maximum communication capability of the terminal device further comprises at least one of:

a maximum number of carriers supported for carrier aggregation communication,

a maximum number of carriers supported for dual connectivity communication, or

a maximum receiver capability corresponding to an interference cancellation function; and

wherein the function parameter or the value range of the function parameter of the terminal device for communication further comprises at least one of:

a number or number range of carriers for carrier aggregation communication,

a number or number range of carriers for dual connectivity communication, or

a receiver capability or capability range corresponding to an interference cancellation function.

6. The method of claim 4, wherein the at least one of the communication capability supported by the access network device, the function parameter supported by the access network device, or the value range of the function parameter supported by the access network device is a respective one supported by the access network device in a communication process of the terminal device and the access network device.

7. The method of any of claims 1-6, wherein different first communication capabilities, different value ranges of the function parameter, or both are supported for different terminal devices by the access network device;

or,

different first communication capabilities, different value ranges of the function parameter, or both are supported for terminal devices in different terminal device groups by the access network device, and a same first communication capability, a same value range of the function parameter, or both are supported for terminal devices in a same terminal device group by the access network device.

8. The method of any of claims 1-7, wherein the function parameter or the value range of the function parameter configured based on the first communication capability is applicable within a predetermined time period after reception of the first message, and the function parameter or the value range of the function parameter configured based

on the maximum communication capability before the updating operation is applicable within other time periods than the predetermined time period;

or,

the function parameter or the value range of the function parameter configured based on the first communication capability is applied to configuration of the function parameter for a service, and when the service changes, the function parameter or the value range of the function parameter is configured based on the maximum communication capability before the updating operation.

9. A wireless communication method, comprising:

receiving, by an access network device, a first message from a terminal device, wherein the first message carries at least one of first capability information or first function parameter information, the first capability information is used for indicating the access network device that the communication capability is needed to be updated into a first communication capability, and the first function parameter information is used for indicating the access network device that a function parameter of the terminal device for communication is needed to be updated into a first function parameter, or that a value range of the function parameter of the terminal device for communication is needed to be updated into a first value range of the function parameter; and

sending, by the access network device, a second message to the terminal device, wherein the second message carries the function parameter or the value range of the function parameter configured for the terminal device by the access network device according to the at least one of the first capability information or the first function parameter information;

wherein the maximum communication capability of the terminal device comprises: a maximum number of antennas supported for Multiple Input Multiple Output (MIMO) communication; and

wherein the function parameter or the value range of the function parameter of the terminal device for communication comprises: a number or number range of antennas for MIMO communication.

10. The method of claim 9, further comprising:

when the terminal device switches from a serving access network device to

another access network device, sending, by the serving access network device, a sixth message to the another access network device, wherein the sixth message carries the at least one of the first capability information or the first function parameter information.

11. The method of claim 10, wherein the sixth message further carries at least one of: a communication capability of the terminal device before the updating operation, or a value range of the function parameter of the terminal device before the updating operation.

12. The method of any of claim 9 to 11, before receiving, by the access network device, the first message from the terminal device, further comprising:

sending, by the access network device, a fifth message to the terminal device, wherein the fifth message used for indicating at least one of: a communication capability supported by the access network device, a function parameter supported by the access network device, or a value range of the function parameter supported by the access network device;

wherein the at least one of the communication capability supported by the access network device, the function parameter supported by the access network device, or the value range of the function parameter supported by the access network device is a respective one supported by the access network device in a communication process of the terminal device and the access network device.

13. The method of any of claim 9 to 12, wherein different communication capabilities, different value ranges of the function parameter, or both are supported for different terminal devices by the access network device;

or,

different communication capabilities, different value ranges of the function parameter, or both are supported for terminal devices in different terminal device groups by the access network device, and a same communication capability, a same value range of the function parameter, or both are supported for terminal devices in a same terminal device group by the access network device.

14. The method of any of claim 9 to 13, wherein the function parameter or the value

range of the function parameter configured based on the first communication capability is applicable within a predetermined time period after reception of the first message, and the function parameter or the value range of the function parameter configured based on the maximum communication capability before the updating operation is applicable within other time periods than the predetermined time period;

or,

the function parameter or the value range of the function parameter configured based on the first communication capability is applied to configuration of the function parameter for a service, and when the service changes, the function parameter or the value range of the function parameter is configured based on the maximum communication capability before the updating operation.

15. A terminal device, comprising a processing unit and a transceiver unit, wherein

the processing unit is configured to generate a first message, wherein the first message carries at least one of first capability information or first function parameter information, the first capability information is used for indicating an access network device that a maximum communication capability of the terminal device is needed to be updated into a first communication capability, and the first function parameter information is used for indicating the access network device that a function parameter or a value range of the function parameter of the terminal device for communication is needed to be updated into a first function parameter, or that a value range of the function parameter of the terminal device for communication is needed to be updated into a first value range of the function parameter; and

the transceiver unit is configured to send the first message to the access network device and receive a second message from the access network device, wherein the second message carries the function parameter or the value range of the function parameter configured for the terminal device by the access network device according to the at least one of the first capability information or the first function parameter information;

wherein the maximum communication capability of the terminal device comprises: a maximum number of antennas supported for Multiple Input Multiple Output (MIMO) communication; and

wherein the function parameter or the value range of the function parameter of

the terminal device for communication comprises: a number or number range of antennas for MIMO communication.

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

receive a fifth message from the access network device, wherein the fifth message used for indicating at least one of: a communication capability supported by the access network device, a function parameter supported by the access network device, or a value range of the function parameter supported by the access network device; and

the processing unit is further configured to determine at least one of the first communication capability, a first function parameter, or a first value range of the function parameter according to at least one of: the communication capability supported by the access network device, the function parameter supported by the access network device, or the value range of the function parameter supported by the access network device.

17. The terminal device of claim 15 or 16, wherein the maximum communication capability of the terminal device further comprises at least one of:

a maximum number of carriers supported for carrier aggregation communication,

a maximum number of carriers supported for dual connectivity communication, or

a maximum receiver capability corresponding to an interference cancellation function; and

wherein the function parameter or the value range of the function parameter of the terminal device for communication further comprises at least one of:

a number or number range of carriers for carrier aggregation communication,

a number or number range of carriers for dual connectivity communication, or

a receiver capability or capability range corresponding to an interference cancellation function.

18. An access network device, comprising a processing unit and a transceiver unit, wherein

the transceiver unit is configured to receive a first message from a terminal device, wherein the first message carries at least one of first capability information or first function parameter information, the first capability information is used for indicating the access network device that the communication capability is needed to be updated into a first communication capability, and the first function parameter information is used for indicating the access network device that a function parameter of the terminal device for communication is needed to be updated into a first function parameter, or that a value range of the function parameter of the terminal device for communication is needed to be updated into a first value;

the processing unit is further configured to generate a second message, wherein the second message carries the function parameter or the value range of the function parameter configured for the terminal device by the access network device according to the at least one of the first capability information or the first function parameter information; and

the transceiver unit is further configured to send the second message to the terminal device;

wherein the maximum communication capability of the terminal device comprises: a maximum number of antennas supported for Multiple Input Multiple Output (MIMO) communication; and

wherein the function parameter or the value range of the function parameter of the terminal device for communication comprises: a number or number range of antennas for MIMO communication.

19. The access network device of claim 18, wherein the transceiver unit is further configured to:

when a present serving access network device is switched from the serving access network device to another access network device, send a sixth message to the another access network device, wherein the sixth message carries the at least one of the first capability information or the first function parameter information.

20. The access network device of claim 19, wherein the sixth message further carries at least one of: a communication capability of the terminal device before the updating operation, or a value range of the function parameter of the terminal device before the

updating operation.