CLAIMS

What is claimed is:

1. An access control method, performed by a first communications device and comprising:

obtaining first information from a terminal, wherein the first information comprises: identification information of the terminal; wherein the identification information of the terminal comprises index information of a default credential server (DCS); and

performing a first operation based on the first information; wherein

the first operation comprises:

sending third information to a third communication device; wherein the third information comprises the index information of the DCS;

receiving a discovered authentication service network element from the third communication device, index information of the DCS supported by the discovered authentication service network element comprises the index information of the DCS in the third information.

2. The method according to claim 1, wherein the first information further comprises at least one of the following: indication information of a first access mode, a first-type routing indication, or a first-type network identifier; or

the method further comprises:

obtaining second information, the second information comprises at least one of the following: the first-type network identifier, the first-type routing indication, or a first-type group identifier;

wherein the first operation further comprises at least one of the following:

selecting a first authentication service network element;

determining the first-type group identifier, the first-type routing indication, information about a service provider, and/or the first-type network identifier; or

requesting, based on the first-type group identifier, the first-type routing indication, the first-type network identifier, the information about the service provider, and/or the indication information of the first access mode, to discover an authentication service network element;

wherein the indication information of the first access mode is used to indicate at least one of the following: an access mode for accessing a first network to download a credential for accessing a second network, an access mode for accessing the first network without a credential for accessing the first network, and an access mode for using only a restricted service, wherein the credential for accessing the first network by the terminal is a default credential;

wherein the first network and the second network are a same network or different networks;

wherein the first authentication service network element comprises at least one of the following: an authentication service network element that provides an authentication service for a terminal being in the first access mode, or an authentication service network element that provides an authentication service for a terminal having a default credential;

the first-type group identifier comprises: a group identifier of the authentication service network element that provides an authentication service for a terminal being in the first access mode;

the first-type network identifier comprises: a network identifier used in the first access mode;

the first-type routing indication comprises: a routing indication used in the first access mode.

3. The method according to claim 2, wherein the requesting, based on the first-type group identifier, the first-type routing indication, the first-type network identifier, and/or the indication information of the first access mode, to discover an authentication service network element comprises at least one of the following:

sending the first-type group identifier to a first target end, wherein the first-type group identifier is used by the first target end to discover an authentication service network element matching the first-type group identifier;

sending the indication information of the first access mode to the first target end, wherein the indication information of the first access mode is used by the first target end to discover an authentication service network element matching the indication information of the first access mode;

sending the first-type routing indication to the first target end, wherein the first-type routing indication is used by the first target end to discover an authentication service network element matching the first-type routing indication; and

sending the first-type network identifier to the first target end, wherein the first-type network identifier is used by the first target end to discover an authentication service network element matching the first-type network identifier.

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

obtaining the indication information of the first access mode from the terminal; and

obtaining the first-type group identifier, the first-type routing indication, or the first-type network identifier according to a configuration on the first communications device; wherein

the first operation further comprises at least one of the following:

determining the first-type group identifier, the first-type routing indication, or the first-type network identifier based on the indication information of the first access mode; and

requesting, based on the first-type group identifier, the first-type routing indication, and/or the first-type network identifier, to discover the authentication service network element.

5. The method according to claim 1, wherein the first communications device comprises access and mobility management function (AMF); or

the index information of the DCS is included in a subscription concealed identifier (SUCI) or a subscription permanent identifier (SUPI) of the terminal for transmission.

6. An access control method, performed by a terminal and comprising:

sending first information to a first communications device; wherein

the first information comprises index information of a default credential server (DCS).

7. The method according to claim 6, wherein the sending first information to a first communications device comprises:

sending the first information to a first communications device in a case that a first condition is satisfied; wherein

the first condition comprises at least one of the following:

a purpose of accessing the first network by the second communications device is to download a credential for accessing the second network;

the second communications device has no credential for accessing the first network; and

the second communications device accessing the first network is merely allowed to use a restricted service.

8. An access control method, performed by a third communications device and comprising:

obtaining third information from a first communications device, wherein the third information comprises index information of a default credential server (DCS);

obtaining fourth information from an authentication service network element, the fourth information comprises index information of the DCS supported by the authentication service network element, the DCS being capable of authenticating a terminal having a default credential;

performing a third operation based on the third information and the fourth information; wherein

the third operation comprises at least one of the following:

discovering an authentication service network element matching the third information; or

sending the discovered authentication service network element to the first communications device; wherein

the index information of the DCS supported by the discovered authentication service network element comprises the index information of the DCS in the third information.

9. The method according to claim 8, wherein the third information further comprises at least one of the following: a first-type group identifier, a first-type routing indication, a first-type network identifier, or indication information of a first access mode;

the fourth information comprises at least one of the following: a routing indication supported by the authentication service network element, a network identifier of a network to which the authentication service network element belongs, an identifier of a group to which the authentication service network element belongs, an access mode supported by the authentication service network element, or an authentication service type supported by the authentication service network element; wherein

an authentication service type supported by the authentication service network element comprises supporting provision of an authentication service to a terminal having a default credential;

the indication information of the first access mode is used to indicate at least one of the following: an access mode for accessing a first network to download a credential for accessing a second network, an access mode for accessing the first network without a credential for accessing the first network, an access mode for using only a restricted service, or the credential for accessing the first network by the terminal is a default credential;

the first network and the second network are a same network or different networks;

the first-type group identifier comprises: a group identifier of the authentication service network element that provides an authentication service for a terminal being in the first access mode;

the first-type routing indication comprises: a routing indication used in the first access mode; and

the first-type network identifier comprises: a network identifier used in the first access mode.

10. The method according to claim 9, wherein in the operation of discovering an authentication service network element matching the third information,

in a case that the third information comprises the indication information of the first access mode, an access mode supported by the discovered authentication service network element is the first access mode; or

in a case that the third information comprises the first-type routing indication, a routing indication supported by the discovered authentication service network element is the first-type routing indication; or

in a case that the third information comprises the first-type network identifier, a network identifier of a network to which the discovered authentication service network element belongs is the first-type network identifier; or

in a case that the third information comprises the first-type group identifier, an identifier of a group to which the discovered authentication service network element belongs is the first-type group identifier; or

in a case that the third information comprises the information about the authentication provider, information about an authentication provider supported by the discovered authentication service network element comprises the information about the authentication provider in the third information; or

the discovered authentication service network element satisfies at least one of the following:

a routing indication supported by the discovered authentication service network element is the first-type routing indication;

a network identifier of a network to which the discovered authentication service network element belongs is the first-type network identifier;

an identifier of a group to which the discovered authentication service network element belongs is the first-type group identifier;

an access mode supported by the discovered authentication service network element is the first access mode; or

an authentication service type supported by the discovered authentication service network element is supporting provision of an authentication service to a terminal having a default credential.

11. The method according to claim 8, the third communications device comprises a network repository function (NRF).

12. An access control method, comprising:

sending, by an authentication service network element, fourth information to a third communications device; wherein

the fourth information comprises index information of a default credential server (DCS) supported by the authentication service network element, the DCS being capable of authenticating a terminal having a default credential.

13. The method according to claim 12, wherein the sending fourth information comprises:

sending the fourth information in a case that a second condition is satisfied; wherein

the second condition comprises that the authentication service network element is an authentication service network element for providing an authentication service to a terminal being in the first access mode.

14. The method according to claim 12, wherein the authentication service network element comprises at least one of the following:

authentication server function (AUSF); or,

Authentication Authorization Accounting (AAA) Server.

15. An access control apparatus, applied to a first communications device and comprising:

a first obtaining module, configured to obtain first information from a terminal, wherein the first information comprises identification information of the terminal; wherein the identification information of the terminal comprises index information of a default credential server (DCS); and

a first execution module, configured to perform a first operation based on the first information; wherein

the first operation comprises at least one of the following:

sending third information to a third communication device; wherein the third information comprises the index information of the DCS;

receiving a discovered authentication service network element from the third communication device, index information of the DCS supported by the discovered authentication service network element comprises the index information of the DCS in the third information.

16. An access control apparatus, applied to a terminal and comprising:

a first sending module, configured to send first information to a first communications device; wherein

the first information comprises index information of a default credential server (DCS).

17. An access control apparatus, applied to a third communications device and comprising:

a second obtaining module, configured to obtain third information from a first communications device, wherein the third information comprises index information of a default credential server (DCS);

the second obtaining module, further configured to obtain fourth information from an authentication service network element, the fourth information comprises index information of the DCS supported by the authentication service network element, the DCS being capable of authenticating a terminal having a default credential;

a second execution module, configured to perform a third operation based on the third information and the fourth information; wherein

the third operation comprises at least one of the following:

discovering an authentication service network element matching the third information;

sending the discovered authentication service network element to the first communications device; wherein

the index information of the DCS supported by the discovered authentication service network element comprises the index information of the DCS in the third information.

18. An access control apparatus, applied to an authentication service network element and comprising:

a second sending module, configured to send fourth information to a third communications device; wherein

the fourth information comprises index information of a default credential server (DCS) supported by the authentication service network element, the DCS being capable of authenticating a terminal having a default credential.

19. A readable storage medium, wherein the readable storage medium stores a program or an instruction, and when the program or the instruction is executed by a processor, the steps of the access control method according to any one of claims 1 to 5 are implemented, or the steps of the access control method according to any one of claims 6 or 7 are implemented, or the steps of the access control method according to claim 8 to 11is implemented, or the steps of the access control method according to claim 12 to 14 is implemented,.

20. A communications device, comprising a processor, a memory, and a computer program stored in the memory and capable of running on the processor, wherein when the computer program is executed by the processor, the steps of the access control method according to any one of claims 1 to 5 are implemented, or the steps of the access control method according to any one of claims 6 or 7 are implemented, or the steps of the access control method according to claim 8 to 11 are implemented, or the steps of the access control method according to claim 12 to 14 are implemented.