CLAIMS

What is claimed is:

1. A key identifier generation method, comprising:

receiving, by an authentication management function, an authentication request message #1 from an access and mobility management function, wherein the authentication request message #1 carries a subscription concealed identifier, and the subscription concealed identifier is a subscription concealed identifier generated based on a permanent identifier of a terminal device;

sending, by the authentication management function, an authentication vector get request message #1 to a unified data management function, wherein the authentication vector get request message #1 carries the subscription concealed identifier;

receiving, by the authentication management function, an authentication vector get response message #1 from the unified data management function, wherein the authentication vector get response message #1 comprises indication information of authentication and key management for application, and a routing indicator that is determined based on the subscription concealed identifier; and

generating, by the authentication management function based on the routing indicator and the indication information of authentication and key management for application, an authentication and key management for application-key identifier #1 .

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

receiving, by the authentication management function, an authentication request message #2 from the access and mobility management function, wherein the authentication request message #2 comprises the permanent identifier;

sending, by the authentication management function, an authentication vector get request message #2 to the unified data management function, wherein the authentication vector get request message #2 carries the permanent identifier;

receiving, by the authentication management function, an authentication vector get response message #2 from the unified data management function, wherein the authentication vector get response message #2 comprises the routing indicator and the indication information of authentication and key management for application; and

generating, by the authentication management function, a new authentication and key

management for application-key identifier #2 by using the routing indicator.

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

receiving, by the authentication management function, an authentication request message #2 from the access and mobility management function, wherein the authentication request message #2 comprises the permanent identifier;

sending, by the authentication management function, an authentication vector get request message #2 to the unified data management function, wherein the authentication vector get request message #2 carries the permanent identifier;

obtaining, by the authentication management function, the routing indicator from a core network element based on the indication information of authentication and key management for application; and

generating, by the authentication management function, a new authentication and key management for application-key identifier #2 by using the routing indicator.

4. The method according to claim 3, wherein the obtaining, by the authentication management function, the routing indicator from another core network element based on the indication information of authentication and key management for application comprises:

determining, by the authentication management function based on the indication information of authentication and key management for application, that the authentication and key management for application-key identifier #2 needs to be generated; and

when the authentication management function does not have the routing indicator locally, obtaining, by the authentication management function, the routing indicator from the core network element.

5. The method according to claim 3 or 4, wherein the core network element comprises the unified data management function or the access and mobility management function.

6. The method according to claim 3, wherein before the obtaining, by the authentication management function, the routing indicator from a core network element based on the indication information of authentication and key management for application, the method further comprises:

receiving, by the authentication management function, an authentication vector get response message #2 from the unified data management function, wherein the authentication vector get response message #2 comprises the indication information of authentication and key management for application.

7. A key identifier generation method, comprising:

receiving, by a unified data management function, an authentication vector get request message #1 from an authentication management function, wherein the authentication vector get request message #1 carries a subscription concealed identifier;

determining, by the unified data management function, a routing indicator based on the subscription concealed identifier;

sending, by the unified data management function, an authentication vector get response message #1 to the authentication management function, wherein the authentication vector get response message #1 comprises the routing indicator, and indication information of authentication and key management for application.

8. The method according to claim 7, wherein the method further comprises:

receiving, by the unified data management function, an authentication vector get request message #2 from the authentication management function, wherein the authentication vector get request message #2 carries a permanent identifier of a terminal device;

determining, by the unified data management function, the routing indicator based on the permanent identifier;

sending, by the unified data management function, an authentication vector get response message #2 to the authentication management function, wherein the authentication vector get response message #2 comprises the routing indicator, and the indication information of authentication and key management for application.

9. The method according to claim 7 or 8, wherein after determining, by the unified data management function, the routing indicator based on the subscription concealed identifier, the method further comprises:

storing, by the unified data management function, the routing indicator.

10. The method according to any one of claims 7 to 9, further comprising:

determining, by the unified data management function, the terminal device supports a service of authentication and key management for application.

11. A communication apparatus, configured to perform the method according to any one of claims 1 to 6.

12. A communication apparatus, configured to perform the method according to any one of claims 7 to 10.

13. A communication apparatus, wherein the communication apparatus comprises a processor, wherein

the processor is configured to execute a computer program or instructions stored in a memory, so that the communication apparatus performs the method according to any one of claims 1 to 6.

14. A communication apparatus, wherein the communication apparatus comprises a processor, wherein

the processor is configured to execute a computer program or instructions stored in a memory, so that the communication apparatus performs the method according to any one of claims 7 to 10.

15. A communication system, comprising the communication apparatus according to claim 11 and the communication apparatus according to claim 12.

16. A communication system, comprising the communication apparatus according to claim 13 and the communication apparatus according to claim 14.

17. A computer-readable storage medium, wherein the computer-readable storage medium has program instructions, and when the program instructions are directly or indirectly executed, the method according to any one of claims 1 to 6, or claims 7 to 10 is implemented.

18. A chip system, wherein the chip system comprises at least one processor, the processor is configured to execute a computer program or instructions stored in a memory, and when the computer program or the instructions is/are executed in the at least one processor, the method according to any one of 1 to 6, or claims 7 to 10 is implemented.

19. A computer program product, comprising instructions, wherein when the instructions are run on a computer, the computer is enabled to perform the method according to any one of claims 1 to 6, or claims 7 to 10.

20. A key identifier generation method, comprising:

receiving, by an authentication management function, an authentication request message #1 from an access and mobility management function, wherein the authentication request message #1 carries a subscription concealed identifier, and the subscription concealed identifier is a subscription concealed identifier generated based on a permanent identifier of a terminal device;

sending, by the authentication management function, an authentication vector get request message #1 to a unified data management function, wherein the authentication vector get request message #1 carries the subscription concealed identifier;

determining, by the unified data management function, a routing indicator based on the subscription concealed identifier;

sending, by the unified data management function, an authentication vector get response message #1 to the authentication management function, wherein the authentication vector get response message #1 comprises indication information of authentication and key management for application, and the routing indicator; and

generating, by the authentication management function based on the routing indicator and the indication information of authentication and key management for application, an authentication and key management for application-key identifier #1 .