CLAIMS

1. A communication method, applied to a location management function, wherein the method comprises:

receiving uplink positioning information of a terminal device from an access network device corresponding to positioning satellites of the terminal device, wherein the positioning satellites comprise a serving satellite and at least one neighboring positioning satellite of the terminal device, and the neighboring positioning satellite is a neighboring satellite of the serving satellite; and

determining a location of the terminal device based on the uplink positioning information of the terminal device.

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

receiving information about an access network device corresponding to the at least one neighboring positioning satellite from a serving access network device corresponding to the serving satellite or from an access and mobility management function; and

sending, based on the information about the access network device corresponding to the at least one neighboring positioning satellite, a first message to the access network device corresponding to the at least one neighboring positioning satellite and the serving access network device, wherein the first message is used to trigger obtaining of the uplink positioning information of the terminal device.

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

receiving capability information from the terminal device, wherein the capability information indicates whether the terminal device supports positioning based on a plurality of satellites.

4. The method according to any one of claims 1 to 3, wherein the determining the location of the terminal device based on the uplink positioning information of the terminal device comprises:

when the terminal device supports positioning based on the plurality of satellites, determining the location of the terminal device based on the uplink positioning information of the terminal device.

5. The method according to any one of claims 1 to 4, wherein at least two satellites among the positioning satellites have different orbits.

6. The method according to any one of claims 1 to 4, wherein all satellites in the positioning satellites have a same orbit.

7. The method according to claim 6, wherein the determining the location of the terminal device based on the uplink positioning information of the terminal device comprises:

determining the location of the terminal device based on information about a neighboring cell of a serving cell of the terminal device and the uplink positioning information of the terminal

device.

8. The method according to any one of claims 1 to 7, wherein the method further comprises:

when the terminal device does not support positioning based on the plurality of satellites, determining the location of the terminal device based on the information about the neighboring cell of the serving cell of the terminal device and the uplink positioning information of the terminal device from the serving access network device corresponding to the serving satellite.

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

obtaining information about the neighboring cell when determining, based on ephemeris information and beam information of the satellite, that a mirror problem exists in positioning of the terminal device; or

receiving first indication information from the serving access network device corresponding to the serving satellite, and obtaining the information about the neighboring cell based on the first indication information, wherein the first indication information indicates that a mirror problem exists in positioning of the terminal device.

10. A communication method, applied to a location management function, wherein the method comprises:

determining a location of a terminal device based on uplink positioning information of the terminal device from an access network device corresponding to positioning satellites when at least two satellites among the positioning satellites of the terminal device have different orbits; and/or

determining the location of the terminal device based on information about a neighboring cell of a serving cell of the terminal device and the uplink positioning information of the terminal device from the access network device corresponding to the positioning satellites when all satellites in the positioning satellites have a same orbit, wherein

the positioning satellites comprise a serving satellite and at least one neighboring positioning satellite of the terminal device, and the neighboring positioning satellite is a neighboring satellite of the serving satellite.

11. The method according to claim 10, wherein the method further comprises:

receiving capability information from the terminal device, wherein the capability information indicates whether the terminal device supports positioning based on a plurality of satellites.

12. The method according to claim 10 or 11, wherein the determining the location of the terminal device based on the uplink positioning information of the terminal device from the access network device corresponding to the positioning satellites when at least two satellites among the positioning satellites of the terminal device have different orbits comprises:

determining the location of the terminal device based on the uplink positioning information

of the terminal device from the access network device corresponding to the positioning satellites when at least two satellites among the positioning satellites of the terminal device have different orbits and the terminal device supports positioning based on the plurality of satellites.

13. The method according to any one of claims 10 to 12, wherein the determining the location of the terminal device based on the uplink positioning information of the terminal device from the access network device corresponding to the positioning satellites comprises:

determining the location of the terminal device based on the uplink positioning information of the terminal device and downlink positioning information of the terminal device.

14. The method according to any one of claims 10 to 13, wherein the method further comprises:

when the terminal device does not support positioning based on the plurality of satellites, determining the location of the terminal device based on the information about the neighboring cell of the serving cell of the terminal device and the uplink positioning information of the terminal device from the serving access network device corresponding to the serving satellite.

15. The method according to any one of claims 10 to 14, wherein the method further comprises:

determining the positioning satellites of the terminal device based on first information, wherein the first information comprises ephemeris information and/or coverage information of the satellite.

16. The method according to any one of claims 10 to 15, wherein the method further comprises:

receiving the uplink positioning information of the terminal device from the access network device corresponding to the positioning satellites.

17. The method according to claim 16, wherein the method further comprises:

sending a second message to the access network device corresponding to the positioning satellites, wherein the second message is used to trigger obtaining of the uplink positioning information of the terminal device.

18. A communication method, applied to a first network device, wherein the method comprises:

obtaining information about an access network device corresponding to at least one neighboring positioning satellite of a terminal device, wherein the neighboring positioning satellite is a neighboring satellite of a serving satellite of the terminal device; and

sending, to a location management function, the information about the access network device corresponding to the at least one neighboring positioning satellite.

19. The method according to claim 18, wherein the method further comprises:

determining a positioning satellites of the terminal device based on first information, wherein the first information comprises ephemeris information and/or coverage information of the satellite.

20. The method according to claim 18 or 19, wherein at least two satellites in the at least one neighboring positioning satellite and the serving satellite of the terminal device have different orbits.

21. The method according to claim 18 or 19, wherein all satellites in the at least one neighboring positioning satellite and the serving satellite have a same orbit.

22. The method according to claim 21, wherein the first network device is a serving access network device corresponding to the serving satellite, and the method further comprises:

when determining, based on the ephemeris information and beam information of the satellite, that a mirror problem exists in positioning of the terminal device, sending information about a neighboring cell of a serving cell of the terminal device or first indication information to the location management function, wherein the first indication information indicates that the mirror problem exists in positioning of the terminal device.

23. The method according to any one of claims 18 to 22, wherein the first network device is the serving access network device corresponding to the serving satellite, and the method further comprises:

receiving, from the location management function, a request message for requesting information about the neighboring cell; and

sending the information about the neighboring cell of the serving cell of the terminal device to the location management function based on the request message.

24. The method according to claim 22 or 23, wherein the information about the neighboring cell comprises one or more of the following information:

an identifier of the neighboring cell, information about a reference signal of the neighboring cell, or information about a beam of the neighboring cell.

25. The method according to any one of claims 18 to 24, wherein the first network device is the serving access network device corresponding to the serving satellite, and the method further comprises:

receiving a first message from the location management function, wherein the first message is used to trigger obtaining of uplink positioning information of the terminal device;

obtaining the uplink positioning information of the terminal device based on the first message; and

sending the uplink positioning information of the terminal device to the location management function.

26. A communication apparatus, comprising a unit or a module configured to perform the

method according to any one of claims 1 to 9, or comprising a unit or a module configured to perform the method according to any one of claims 10 to 17, or comprising a unit or a module configured to perform the method according to any one of claims 18 to 25.

27. A communication apparatus, comprising a processor and an interface circuit, wherein the interface circuit is configured to: receive a signal from another communication apparatus other than the communication apparatus and transmit the signal to the processor, or send a signal from the processor to another communication apparatus other than the communication apparatus; and the processor is configured to implement the method according to any one of claims 1 to 9, or the method according to any one of claims 10 to 17, or the method according to any one of claims 18 to 25 by using a logic circuit or by executing code instructions.

28. A computer-readable storage medium, wherein the storage medium stores a computer program or instructions, and when the computer program or the instructions are executed by a communication apparatus, the method according to any one of claims 1 to 9 is implemented, or the method according to any one of claims 10 to 17 is implemented, or the method according to any one of claims 18 to 25 is implemented.

29. A computer program product, comprising computer program code, wherein when the computer program code is run on a computer, the method according to any one of claims 1 to 9 is implemented, or the method according to any one of claims 10 to 17 is implemented, or the method according to any one of claims 18 to 25 is implemented.

30. A communication system, comprising a location management function and a first network device, wherein the location management function is used to implement the method according to any one of claims 1 to 9, or implement the method according to any one of claims 10 to 17, and the first network device is configured to implement the method according to any one of claims 18 to 25.