

CLAIMS

What is claimed is:

1. A communication method, comprising:

determining satellite coverage information of a terminal device, wherein the satellite coverage information indicates a time period in which the terminal device is covered by a satellite network and/or indicates a time period in which the terminal device is not covered by the satellite network; and

determining a maximum waiting time based on the satellite coverage information, wherein the maximum waiting time indicates maximum duration for waiting until the terminal device is reachable.

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

determining, based on the satellite coverage information, that the terminal device is unreachable.

3. The method according to claim 1 or 2, wherein the determining satellite coverage information of a terminal device comprises:

receiving the satellite coverage information.

4. The method according to claim 1 or 2, wherein the determining satellite coverage information of a terminal device comprises:

receiving ephemeris information of a satellite cell in which the terminal device is located; and

determining the satellite coverage information based on the ephemeris information.

5. A communication method, comprising:

receiving sleep time information, wherein a sleep time period corresponding to the sleep time information comprises a time period in which a terminal device is not covered by a satellite network, the sleep time information is determined based on satellite coverage information of the terminal device, and the satellite coverage information indicates a time period in which the terminal device is covered by the satellite network and/or the time period in which the terminal device is not covered by the satellite network; and

sleeping based on the sleep time information.

6. The method according to claim 5, wherein

the sleep time information comprises a sleep start time, and the sleep start time is within an eDRX cycle of the terminal device, a periodic TAU cycle of the terminal device, or a periodic registration cycle of the terminal device.

7. The method according to claim 5, wherein

the sleep time information comprises a sleep start time and a sleep end time; or

the sleep time information comprises a sleep start time and sleep duration.

8. A communication method, comprising:

determining a periodic tracking area update TAU cycle of a terminal device based on satellite coverage information of the terminal device, and sending the periodic TAU cycle to the terminal device; or

determining a periodic registration cycle of the terminal device based on satellite coverage information of the terminal device, and sending the periodic registration cycle to the terminal device, wherein

the satellite coverage information indicates a time period in which the terminal device is covered by a satellite network and/or indicates a time period in which the terminal device is not covered by the satellite network.

9. The method according to claim 8, wherein a time period corresponding to the periodic TAU cycle comprises the time period in which the terminal device is not covered by the satellite network; or

a time period corresponding to the periodic registration cycle comprises the time period in which the terminal device is not covered by the satellite network.

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

sending indication information to an access network device based on the satellite coverage information, wherein the indication information indicates the access network device to execute a procedure of releasing the terminal device.

11. The method according to any one of claims 8 to 10, wherein the method further comprises:

determining first duration based on the satellite coverage information of the terminal device, wherein the first duration is duration after the terminal device enters an idle state and before the terminal device enters a sleep state; and

sending the first duration to the terminal device.

12. The method according to any one of claims 8 to 11, wherein the method further comprises:

sending a cause value to the terminal device, wherein the cause value indicates that the terminal device skips performing uplink transmission during sleep.

13. A communication method, comprising:

receiving a periodic TAU cycle from a mobility management network element, and performing periodic TAU based on the periodic TAU cycle, wherein a time period corresponding to the periodic TAU cycle comprises a time period in which a terminal device is not covered by a satellite network; or

receiving a periodic registration cycle from a mobility management network element, and performing periodic registration based on the periodic registration cycle, wherein a time period corresponding to the periodic registration cycle comprises a time period in which a terminal device is not covered by a satellite network.

14. The method according to claim 13, wherein the periodic TAU cycle or the periodic registration cycle is determined based on satellite coverage information of the terminal device, and the satellite coverage information indicates a time period in which the terminal device is covered by the satellite network and/or the time period in which the terminal device is not covered by the satellite network.

15. The method according to claim 13 or 14, wherein before the receiving a periodic TAU cycle from a mobility management network element, the method further comprises:

 sending a TAU request to the mobility management network element based on the satellite coverage information of the terminal device; or

 before the receiving a periodic registration cycle from a mobility management network element, the method further comprises:

 sending a mobility registration update request to the mobility management network element based on the satellite coverage information of the terminal device, wherein

 the satellite coverage information indicates the time period in which the terminal device is covered by the satellite network and/or the time period in which the terminal device is not covered by the satellite network.

16. The method according to any one of claims 13 to 15, wherein the method further comprises:

 receiving first duration from the mobility management network element, wherein the first duration is duration after the terminal device enters an idle state and before the terminal device enters a sleep state, and the first duration is determined based on the satellite coverage information of the terminal device.

17. The method according to any one of claims 13 to 16, wherein the method further comprises:

 receiving a cause value from the mobility management network element, wherein the cause value is discontinuous satellite coverage.

18. The method according to claim 17, wherein the cause value further indicates that the terminal device skips performing uplink transmission during sleep; and

 the method further comprises:

 when there is an uplink transmission requirement, determining, based on the cause value, to skip performing uplink transmission.

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

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

21. A communication system, comprising:

a mobility management network element, configured to perform the method according to any one of claims 1 to 4, or 8 to 12; and

an access network device, configured to send satellite coverage information of a cell in which a terminal device is located to the mobility management network element.