

CLAIMS

What is claimed is:

1. A method for sending a sounding reference signal SRS, performed by a terminal and comprising:

5 receiving discontinuous reception DRX-related target information sent by a network-side device;

sending a sounding reference signal SRS for positioning based on the DRX-related target information;

10 wherein the target information comprises first information, and the method further comprises:

sending the first information to a location management device, wherein the first information comprises at least one of the following: DRX configuration information, configuration information of the SRS, a current period of the SRS, indication information for indicating sending or not sending the SRS in a DRX non-active time, 15 indication information that the terminal has configured DRX, indication information that a DRX cycle of the terminal has changed, indication information that the terminal has cancelled DRX configuration, a relationship between sending of the SRS and wake-up information, and indication information that the SRS in the current period is not to be sent due to influence of a wake-up signal,

20 wherein the first information is used for at least one of the following:

determining, by a neighboring cell, whether the terminal sends or does not send the SRS in the DRX non-active time; and

cancelling, reconfiguring or re-requesting measurement on the SRS by the neighboring cell.

25 2. The method according to claim 1, wherein

the step of sending an SRS for positioning based on DRX-related target information comprises:

sending the SRS for positioning only in a DRX active time, or sending the SRS for positioning in the DRX non-active time; or

the step of sending an SRS for positioning based on an RRC status comprises:

5 sending the SRS for positioning only in an RRC connected state, or sending the SRS for positioning in an RRC non-connected state.

3. The method according to claim 1 or 2, wherein the target information comprises second information, and the method further comprises: receiving second information sent by a location management device, wherein the second information comprises at least one of the following: indication information for indicating sending or not sending
10 the SRS in the DRX non-active time, a current period of the SRS, and a relationship between sending of the SRS and wake-up information.

4. The method according to claim 3, wherein the sending an SRS for positioning based on DRX-related target information comprises:

15 in a slot in which the first information or the second information is received, or in an NT1 time after the first information or the second information is received, or in a next period of the SRS after a slot in which the first information or the second information is received, sending the SRS for positioning based on the DRX-related target information.

5. The method according to claim 1, wherein the DRX configuration information
20 comprises at least one of the following: a DRX cycle, configuration information of a DRX onDuration timer, configuration information of a DRX inactivity timer, configuration information of a DRX downlink retransmission timer, configuration information of a DRX uplink retransmission timer, configuration information of a DRX long-cycle start offset timer, configuration information of a DRX short cycle,
25 configuration information of a DRX short-cycle timer, configuration information of a DRX downlink HARQ round-trip transmission time timer, configuration information of a DRX uplink HARQ round-trip transmission time timer, and configuration information of a DRX command MAC CE.

6. The method according to claim 3, wherein the current period of the SRS is one of the following:

T2 in a case that DRX has been configured;

T3 in a case that the DRX cycle has changed; and

5 T1 in a case that the DRX configuration has been cancelled; wherein

T1, T2, and T3 are different from each other.

7. The method according to claim 1, wherein the current period of the SRS is determined based on a function of a configuration periodicity of the SRS and/or a function of the DRX cycle.

10 8. The method according to claim 2, wherein the sending an SRS for positioning in the DRX non-active time comprises:

sending the SRS only in the DRX non-active time; or

skipping sending the SRS for positioning in a DRX non-active time; or

15 sending the SRS for positioning in the DRX non-active time and a DRX active time.

9. The method according to claim 8, wherein the sending the SRS only in the DRX non-active time comprises:

if a time window for sending the SRS partially overlaps a time window of the DRX active time, cancelling sending the SRS in an overlapping portion.

20 10. The method according to claim 1 or 8, wherein the sending the SRS for positioning in the DRX active time comprises:

cancelling sending the SRS if the SRS conflicts with the following information:

a physical downlink control channel PDCCH, a physical uplink control channel PUCCH, a physical uplink shared channel PUSCH, a PUCCH for dynamic scheduling,

25 a PUSCH for dynamic scheduling, a PUCCH carrying a scheduling request SR, or retransmission.

11. The method according to claim 1 or 8, wherein the sending the SRS for positioning in the DRX active time comprises:

if no wake-up signal is detected, sending, to a location management device, indication information for indicating not sending the SRS in a current period due to influence of a wake-up signal.

12. The method according to claim 1, wherein behaviors are different for an
5 aperiodic SRS, a periodic SRS, and a semi-static SRS.

13. The method according to claim 12, wherein for the aperiodic SRS, the SRS for positioning is sent in a DRX active time and the DRX non-active time.

14. The method according to claim 1, wherein a periodicity of the SRS in an RRC non-connected state is different from a periodicity of the SRS in an RRC connected
10 state.

15. The method according to claim 14, wherein the periodicity of the SRS in the RRC non-connected state is greater than the periodicity of the SRS in the RRC connected state.

16. The method according to claim 1, further comprising:
15 sending RRC state indicator information to a location management device.

17. The method according to claim 16, wherein the RRC state indicator information comprises at least one of the following: indication information for indicating the location management device to cancel, reconfigure, or re-request measurement on the SRS by a neighboring cell, relationship information between
20 sending of the SRS and an RRC connected state, and RRC connection state information.

18. A terminal, 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 method for sending an SRS
25 according to any one of claims 1 to 17 are implemented.

19. A network-side 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 following steps are implemented:

sending first information to a terminal, a location management device, or a neighboring cell, wherein the first information comprises at least one of the following:

5 DRX configuration information, configuration information of the SRS, a current period of the SRS, indication information for indicating sending or not sending the SRS in a DRX non-active time, indication information that the terminal has configured DRX, indication information that a DRX cycle of the terminal has changed, indication information that the terminal has cancelled DRX configuration, a relationship between
10 sending of the SRS and wake-up information, and indication information that the SRS in the current period is not to be sent due to influence of a wake-up signal; and the first information is used to determine at least one of the following: whether the terminal sends or does not send the SRS in the DRX non-active time and how to send the SRS; and/or

15 sending third information to a location management device, or a neighboring cell, wherein the third information comprises radio resource control RRC state indicator information; and the third information is used to determine: whether the terminal sends or does not send the SRS in an RRC non-connected state, wherein the RRC connected state indication information comprises one of the following: indication information for
20 indicating the location management device to cancel, reconfigure, or re-request measurement on the SRS by the neighboring cell; relationship information between sending of the SRS and an RRC connected state, and RRC connection state information,

wherein when the location management device sends the first information and/or
25 the third information, the location management device is used for at least one of the following:

forwarding the first information to the neighboring cell, to cause the neighboring cell to determine, based on the first information, whether the terminal sends or does not send the SRS in the DRX non-active time, and

canceling, reconfiguring, or re-requesting measurement on the SRS by the
5 neighboring cell.

20. A location management 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 following steps are implemented:

10 receiving first information, wherein the first information comprises at least one of the following: DRX configuration information, configuration information of the SRS, a current period of the SRS, indication information for indicating sending or not sending the SRS in a DRX non-active time, indication information that a terminal has configured DRX, indication information that a DRX cycle of the terminal has changed,
15 indication information that the terminal has cancelled DRX configuration, a relationship between sending of the SRS and wake-up information, and indication information that the SRS in the current period is not to be sent due to influence of a wake-up signal; and

determining at least one of the following based on the first information: whether
20 the terminal sends or does not send an SRS for positioning in the DRX non-active time and how to send the SRS; and/or

receiving third information, wherein the third information comprises radio resource control RRC state indicator information, and the third information is used to determine whether the terminal sends or does not send the SRS in an RRC non-
25 connected state, wherein the RRC connected state indication information comprises one of the following: indication information for indicating the location management device to cancel, reconfigure, or re-request measurement on the SRS by a neighboring

cell, relationship information between sending of the SRS and an RRC connected state;
and RRC connection state information, and

determining, based on the third information, whether the terminal sends or does
not send the SRS for positioning in the RRC non-connected state,

5 wherein the method further comprising:

forwarding the first information to the neighboring cell, to cause the neighboring
cell to determine, based on the first information, whether the terminal sends or does
not send the SRS in the DRX non-active time; and

10 cancelling, reconfiguring, or re-requesting measurement on the SRS by the
neighboring cell.