CLAIMS

1. A wireless communication method for use in a wireless terminal, the method comprising:

performing a global navigation satellite system, GNSS, position if an event occurs, wherein performing the GNSS position if the event occurs comprises:

performing the GNSS position when being in a connected mode in a gap if the event occurs,

wherein the event comprises at least one of:

at least one evaluation period is greater than or equal to a time of the wireless terminal performing the GNSS position, wherein the wireless terminal evaluates a radio link quality in the evaluation period,

at least one discontinuous reception, DRX, cycle is greater than or equal to a time of the wireless terminal performing the GNSS position,

a discontinuous reception, DRX, inactive time or a DRX cycle is greater than or equal to a time of the wireless terminal performing the GNSS position,

a DRX cycle is equal to sf2048,

a DRX onDurationTimer is less than or equal to psf40,

a time of the wireless terminal performing the GNSS position is less than a threshold,

a start type of the GNSS position is a hot start or a warm start,

a data buffer is not empty,

there is subsequent data transmission,

a quality of service, QoS, satisfies delay sensitive requirements, or

an interval between arrival data is less than a threshold.

2. The wireless communication method of claim 1, wherein the event further comprises:

a current GNSS position of the wireless terminal is invalid or is going to be invalid

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3. The wireless communication method of claim 1, wherein the gap comprises at least one of a period which is not scheduled for data transmissions, or a DRX inactive time.

4. The wireless communication method of claim 3, wherein the period is a physical

downlink control channel gap, a downlink gap or a gap configured for acquiring the GNSS position.

5. The wireless communication method of claim 3, wherein the gap is greater than or equal to a time of the wireless terminal performing the GNSS position, or

wherein an occasion of the gap is no later than a current GNSS position of the wireless terminal becomes invalid.

6. The wireless communication method of any one of claims 1 to 5, wherein performing the GNSS position if the event occurs comprises:

performing the GNSS position after triggering a radio link failure, RLF, if the event occurs,

wherein the event comprises at least one of:

a current GNSS position of the wireless terminal is invalid or is going to be invalid,

at least one evaluation period is less than a time of the wireless terminal performing the GNSS position, wherein the wireless terminal evaluates a link quality in the evaluation period,

at least one DRX cycle is less than or equal to a time of the wireless terminal performing the GNSS position,

a DRX inactive time or a DRX cycle is less than a time of the wireless terminal performing the GNSS position,

a time of the wireless terminal performing the GNSS position is greater than a threshold,

a start type of the GNSS position is a warm start or cold start,

a data buffer is not empty,

there is subsequent data transmission,

a quality of service, QoS, satisfies delay sensitive requirements, or

an interval between arrival data is less than a threshold.

7. The wireless communication method of any one of claims 1 to 6,

wherein performing the GNSS position if the event occurs comprises:

performing, if the event occurs, the GNSS position by leaving a connected mode or entering an idle mode,

wherein the event comprises at least one of:

a current GNSS position of the wireless terminal is invalid or is going to be invalid,

a data buffer is empty,

a quality of service, QoS, satisfies delay insensitive requirements,

an interval time between arrival data is greater than a threshold, or

there is no subsequent data transmission.

8. The wireless communication method of any one of claims 1 to 7, further comprising:

receiving, from a wireless network node, a configuration message of enabling performing the GNSS position if the event occurs,

wherein the configuration message comprises at least one of a radio link control message or a system information block.

9. The wireless communication method of any one of claims 1 to 5, further comprising:

receiving, from a wireless network node, configuration information of the gap, or

receiving, from a wireless network node, an indication or an activation of a DRX cycle, wherein the gap comprises a DRX inactive time.

10. The wireless communication method of claim 9, wherein the configuration information, the indication or the activation of a DRX cycle is comprised in a radio link control message, a system information block, downlink control information or a media access control control element, MAC CE,

wherein the configuration information of the gap comprises at least one of a start time, a duration, a period, an indication of the gap being used for the GNSS position or an activation indication of activating the gap to be used for the GNSS position,

wherein the indication or the activation of the DRX cycle comprises at least one of a start time, a duration, a period, an on-duration, an indication of the DRX cycle being used for the GNSS position or an identity of the DRX cycle.

11. The wireless communication method of any one of claims 1 to 5, wherein performing the GNSS position in the gap when in the connected mode if the event occurs comprises at least one of:

starting a timer, wherein a length of the timer is determined based on a time of the wireless terminal performing the GNSS position,

stopping the timer when completing the GNSS position,

triggering an RLF or entering the idle mode if the GNSS position fails, the GNSS

position cannot be performed or the timer expires,

triggering a radon access channel, RACK, or a scheduling request, SR, after completing the GNSS position or restoring an uplink synchronization,

generating, after completing the GNSS position, a MAC CE for reporting a validity duration of a new GNSS position acquired by the completed GNSS position,

transmitting the MAC CE in UL sources allocated for subsequent transmissions,

triggering a RACH or an SR for transmitting the MAC CE,

clearing a hybrid automatic repeat request buffer if a current GNSS position of the wireless terminal becomes invalid,

releasing uplink resources if a current GNSS position of the wireless terminal becomes invalid, or

recovering uplink transmissions after completing the GNSS position or restoring an uplink synchronization.

12. The wireless communication method of any one of claims 1 to 11, further comprising:

transmitting, to a wireless network node, assistance information associated with performing the GNSS position.

13. A wireless communication method for use in a wireless network node, the method comprising:

transmitting, to a wireless terminal, a configuration message enabling the wireless terminal to perform a global navigation satellite system, GNSS, position if an event occurs at the wireless terminal, wherein the configuration message enables performing the GNSS position when being in a connected mode in a gap if the event occurs,

wherein the event comprises at least one of:

at least one evaluation period is greater than or equal to a time of the wireless terminal performing the GNSS position, wherein the wireless terminal evaluates a radio link quality in the evaluation period,

at least one discontinuous reception, DRX, cycle is greater than or equal to a time of the wireless terminal performing the GNSS position,

a discontinuous reception, DRX, inactive time or a DRX cycle is greater than or equal to a time of the wireless terminal performing the GNSS position,

a DRX cycle is equal to sf2048,

a DRX onDurationTimer is less than or equal to psf40,

a time of the wireless terminal performing the GNSS position is less than a threshold,

a start type of the GNSS position is a hot start or a warm start,

a data buffer is not empty,

there is subsequent data transmission,

a quality of service, QoS, satisfies delay sensitive requirements, or

an interval between arrival data is smaller than a threshold.

14. The wireless communication method of claim 13, wherein the event further comprises at least one of:

a current GNSS position of the wireless terminal is invalid or is going to be invalid.

15. The wireless communication method of claim 13, wherein the gap comprises at least one of a period which is not scheduled for data transmissions, or a DRX inactive time;

wherein the period is a physical downlink control channel gap or a downlink gap or a gap configured for acquiring the GNSS position;

wherein the gap is greater than or equal to a time of the wireless terminal performing the GNSS position; and

wherein an occasion of the gap is no later than a current GNSS position of the wireless terminal becomes invalid.

16. The wireless communication method of any one of claims 13 to 15, wherein the configuration message enables performing the GNSS position after triggering a radio link failure, RLF, if the event occurs,

wherein the event comprises at least one of:

a current GNSS position of the wireless terminal is invalid or is going to be invalid,

at least one evaluation period is less than a time of the wireless terminal performing the GNSS position, wherein the wireless terminal evaluates a radio link quality in the evaluation period,

at least one DRX cycle is less than or equal to a time of the wireless terminal performing the GNSS position,

a DRX inactive time or a DRX cycle is less than a time of the wireless terminal

performing the GNSS position,

a time of the wireless terminal performing the GNSS position is greater than a threshold,

a start type of the GNSS position is a warm start or a cold start,

a data buffer is not empty,

there is subsequent data transmission,

a quality of service, QoS, satisfies delay sensitive requirements, or

an interval between arrival data is less than a threshold.

17. The wireless communication method of any one of claims 13 to 16, wherein the configuration message enables performing, if the event occurs, the GNSS position by leaving a connected mode or entering an idle mode,

wherein the event comprises at least one of:

a current GNSS position of the wireless terminal is invalid or is going to be invalid,

a data buffer is empty,

a quality of service, QoS, satisfies delay insensitive requirements,

an interval time between arrival data is greater than a threshold, or

there is no subsequent data transmission.

18. The wireless communication method of any one of claims 13 to 17, further comprising:

receiving, from the wireless terminal, assistance information associated with performing the GNSS position.

19. A wireless terminal, comprising:

a communication unit, and

a processor, configured to perform a global navigation satellite system, GNSS, position if an event occurs, wherein performing the GNSS position if the event occurs comprises:

performing the GNSS position when being in a connected mode in a gap if the event occurs,

wherein the event comprises at least one of:

at least one evaluation period is greater than or equal to a time of the wireless

terminal performing the GNSS position, wherein the wireless terminal evaluates a radio link quality in the evaluation period,

at least one discontinuous reception, DRX, cycle is greater than or equal to a time of the wireless terminal performing the GNSS position,

a discontinuous reception, DRX, inactive time or a DRX cycle is greater than or equal to a time of the wireless terminal performing the GNSS position,

a DRX cycle is equal to sf2048,

a DRX onDurationTimer is less than or equal to psf40,

a time of the wireless terminal performing the GNSS position is less than a threshold,

a start type of the GNSS position is a hot start or a warm start,

a data buffer is not empty,

there is subsequent data transmission,

a quality of service, QoS, satisfies delay sensitive requirements, or

an interval between arrival data is less than a threshold.

20. A wireless network node, comprising:

a communication unit, configured to transmit, to a wireless terminal, a configuration message enabling the wireless terminal to perform a global navigation satellite system, GNSS position if an event occurs at the wireless terminal, wherein performing the GNSS position if the event occurs comprises:

performing the GNSS position when being in a connected mode in a gap if the event occurs,

wherein the event comprises at least one of:

at least one evaluation period is greater than or equal to a time of the wireless terminal performing the GNSS position, wherein the wireless terminal evaluates a radio link quality in the evaluation period,

at least one discontinuous reception, DRX, cycle is greater than or equal to a time of the wireless terminal performing the GNSS position,

a discontinuous reception, DRX, inactive time or a DRX cycle is greater than or equal to a time of the wireless terminal performing the GNSS position,

a DRX cycle is equal to sf2048,

a DRX onDurationTimer is less than or equal to psf40,

a time of the wireless terminal performing the GNSS position is less than a

threshold,

a start type of the GNSS position is a hot start or a warm start,

a data buffer is not empty,

there is subsequent data transmission,

a quality of service, QoS, satisfies delay sensitive requirements, or

an interval between arrival data is smaller than a threshold.