

CLAIMS

1. A method for configuring a positioning reference signal, applied to a network device side and comprising:

transmitting resource configuration information of a positioning reference signal to a terminal,

wherein the resource configuration information comprises at least one parameter item, one or more of the at least one parameter item carried in the resource configuration information correspond to at least two optional values, a value of the parameter item is one of the at least two optional values corresponding to the parameter item, and a resource pattern is related to the value of the parameter item; and

transmitting the positioning reference signal to the terminal based on the resource pattern indicated by the resource configuration information,

wherein the parameter item comprises a position of the first symbol in the resource pattern.

2. A method for configuring a positioning reference signal, applied to a terminal and comprising:

receiving resource configuration information of a positioning reference signal from a network device side, wherein the resource configuration information comprises at least one parameter item, one or more of the at least one parameter item carried in the resource configuration information correspond to at least two optional values, and a value of the parameter item is one of the at least two optional values corresponding to the parameter item;

determining a resource pattern of the positioning reference signal based on the value of the parameter item in the resource configuration information; and

receiving the positioning reference signal from the network device side based on the resource pattern,

wherein the parameter item comprises a position of the first symbol in the resource pattern.

3. The method for configuring a positioning reference signal according to claim 1 or 2, wherein the parameter item further comprises: a frequency density of the resource pattern, and the frequency density is used to indicate that the positioning reference signals are spaced N subcarriers apart in frequency domain, wherein N is one of first optional values corresponding to the frequency density.

4. The method for configuring a positioning reference signal according to claim 3, wherein the first optional value comprises at least one of: 1, 2, 3, 4, 6, and 12.

5. The method for configuring a positioning reference signal according to claim 3, wherein the parameter item further comprises: a frequency offset between adjacent symbols in the resource pattern, and a second optional value corresponding to the frequency offset is related to the first optional value.

6. The method for configuring a positioning reference signal according to claim 5, wherein the second optional value is a factor of the first optional value, and the second optional value is different from the first optional value.

7. The method for configuring a positioning reference signal according to claim 5, wherein the frequency offset is a positive offset, or the frequency offset is a negative offset.

8. The method for configuring a positioning reference signal according to claim 5, wherein in a case that a first frequency position obtained through calculation based on the frequency offset exceeds frequency range of a resource block (RB), a frequency position of the positioning reference signal is a position obtained by performing modulo on the first frequency position based on a specific value.

9. The method for configuring a positioning reference signal according to claim 5, wherein the parameter item further comprises the number of symbols comprised in the resource pattern, and a third optional value corresponding to the number of symbols is greater than or equal to a quotient of the first optional value and the second optional value.

10. The method for configuring a positioning reference signal according to claim 1 or 2, wherein the parameter item comprises the number of symbols comprises 2, 4, 6,

12.

11. The method for configuring a positioning reference signal according to claim 1 or 2, wherein the parameter item comprises the number of symbols comprised in the resource pattern, and a third optional value corresponding to the number of symbols is related to a cyclic prefix (CP) type of the positioning reference signal.

12. The method for configuring a positioning reference signal according to any one of claims 9 to 11, wherein the parameter item further comprises a range of a fourth optional value corresponding to the position of the first symbol is $[0, M]$, wherein M is a difference between the number of symbols comprised in the resource pattern and the maximum number of symbols in the time domain transmission unit in which the positioning reference signal is located.

13. The method for configuring a positioning reference signal according to claim 3, wherein the parameter item further comprises a lowest frequency position for the first symbol in the resource pattern, and a fifth optional value corresponding to the lowest frequency position falls in a range of $[0, N-1]$.

14. The method for configuring a positioning reference signal according to claim 1 or 2, wherein in a case that the resource pattern comprises at least two discontinuous symbols, the resource pattern occupies at least one resource element RE on every P subcarriers, wherein P is 1, 2, or 3; or

wherein in a case that the resource pattern comprises at least two discontinuous symbols, symbols contained in the resource pattern are equally spaced apart; or

wherein in a case that the resource pattern comprises at least two discontinuous symbols, a resource pattern for the at least two discontinuous symbols is obtained by truncating a resource pattern for continuous symbols.

15. The method for configuring a positioning reference signal according to claim 1 or 2, wherein in a case that the resource patterns correspond to at least two ports, resource patterns on different ports are the same, or the resource patterns on different ports are time-division multiplexed, or the resource patterns on different ports are frequency-division multiplexed.

16. The method for configuring a positioning reference signal according to claim 15, wherein in a case that the resource patterns on different ports are the same, generation sequences for positioning reference signals on different ports are different, or frequency domain orthogonal covering codes for the positioning reference signals on different ports are different.

17. The method for configuring a positioning reference signal according to claim 16, wherein an initial value of the generation sequence is related to a port number of the port.

18. The method for configuring a positioning reference signal according to claim 1 or 2, wherein the resource pattern comprises at least two resource subpatterns, and the at least two resource subpatterns are related to the value of the parameter item; or wherein frequency offsets of resource patterns in different cells are different; or wherein resource patterns in different cells are time-division multiplexed.

19. A network device, comprising:

a first transmitting module, configured to transmit resource configuration information of a positioning reference signal to a terminal; and

a second transmitting module, configured to transmit the positioning reference signal based on a resource pattern indicated by the resource configuration information, wherein the resource configuration information comprises at least one parameter item, one or more of the at least one parameter item carried in the resource configuration information correspond to at least two optional values, a value of the parameter item is one of the at least two optional values corresponding to the parameter item, and the resource pattern is related to the value of the parameter item,

wherein the parameter item comprises a position of the first symbol in the resource pattern.

20. A terminal, comprising:

a first receiving module, configured to receive resource configuration information of a positioning reference signal from a network device side, wherein the resource configuration information comprises at least one parameter item, one or more of the at

least one parameter item carried in the resource configuration information correspond to at least two optional values, and a value of the parameter item is one of the at least two optional values corresponding to the parameter item;

a determining module, configured to determine a resource pattern of the positioning reference signal based on the value of the parameter item in the resource configuration information; and

a second receiving module, configured to receive the positioning reference signal from a network device side based on the resource pattern,

wherein the parameter item comprises a position of the first symbol in the resource pattern.