CLAIMS

1. A ranging method, wherein the method comprises:

determining a first security parameter based on a plurality of input parameters, wherein the plurality of input parameters comprise a first random number and a first communication parameter;

obtaining a second measurement sequence based on the first security parameter and a first measurement sequence; and

sending a first security measurement signal, wherein the first security measurement signal is associated with the second measurement sequence, and the first security measurement signal is used for position information measurement.

2. The method according to claim 1, wherein the first communication parameter is related to one or more of the following information:

a sequence number of a first OFDM symbol, a number of a first time unit, or a number of a first frequency unit, wherein the first OFDM symbol carries the first security measurement signal, the first time unit comprises the first OFDM symbol, and the first frequency unit comprises a frequency resource used for transmitting the first security measurement signal.

3. The method according to claim 2, wherein the first time unit is comprised in a plurality of consecutive time units; based on a preset frequency unit number sequence for transmission, frequency hopping transmission is performed on a signal carried in the plurality of consecutive time units; and the number of the first frequency unit belongs to the preset frequency unit number sequence.

4. The method according to claim 1, wherein the first communication parameter is associated with a position of a first OFDM symbol relative to a second OFDM symbol, the first OFDM symbol carries the first security measurement signal, the second OFDM symbol carries a second security measurement signal, and the first communication parameter corresponding to the second security measurement signal is a preset value.

5. The method according to any one of claims 1 to 4, wherein obtaining the second measurement sequence based on the first security parameter and the first measurement sequence comprises:

scrambling the first measurement sequence by using the first security parameter, to obtain the second measurement sequence;

or

performing exclusive OR on the first security parameter and the first measurement sequence, to obtain the second measurement sequence.

6. The method according to any one of claims 1 to 5, wherein determining the first security

parameter based on the plurality of input parameters comprises:

obtaining N bit sequences based on the plurality of input parameters, wherein the N bit sequences comprise the first security parameter, N is an integer, and N≥1.

7. The method according to claim 6, wherein when N is greater than 1, the plurality of input parameters further comprise a fresh parameter; and obtaining the N bit sequences based on the plurality of input parameters comprises:

obtaining the N bit sequences based on the first random number, the first communication parameter, and the fresh parameter, wherein the fresh parameter is refreshed each time after one of the N bit sequences is obtained.

8. The method according to claim 7, wherein

a fresh parameter corresponding to a first bit sequence in the N bit sequences is a preset value, a fresh parameter corresponding to a second bit sequence in the N bit sequences is associated with the preset value and a sequence number of the second bit sequence, and the second bit sequence is different from the first bit sequence.

9. The method according to any one of claims 6 to 8, wherein the first security measurement signal comprises a plurality of measurement subsignals, and the plurality of measurement subsignals are sent via a plurality of antennas;

the first measurement sequence comprises a plurality of first subsequences, the plurality of subsequences respectively generate a plurality of second subsequences by using different parts of the first security parameter, and the plurality of second subsequences belong to the second measurement sequence; and

each measurement subsignal corresponds to one of the plurality of second subsequences.

10. The method according to any one of claims 1 to 9, wherein the method is applied to a first node, and the method further comprises:

sending the first security measurement signal to a second node, wherein the first security measurement signal is used to measure a distance between the first node and the second node.

11. The method according to claim 10, wherein the first random number is determined by the first node; and the method further comprises:

sending the first random number to the second node.

12. The method according to any one of claims 1 to 11, wherein the first communication parameter is from a grant node, and the grant node is a node that sends data scheduling information.

13. The method according to any one of claims 1 to 12, wherein the first measurement sequence is a pseudo-random sequence.

14. A ranging method, wherein the method comprises:

determining a first security parameter based on a plurality of input parameters, wherein the

plurality of input parameters comprise a first random number and a first communication parameter;

receiving a first security measurement signal, wherein the first security measurement signal is associated with the second measurement sequence, and the first security measurement signal is used for position information measurement; and

obtaining a first measurement sequence based on the first security parameter and the first security measurement signal.

15. The method according to claim 14, wherein the first communication parameter is related to one or more of the following information:

a sequence number of a first OFDM symbol, a number of a first time unit, or a number of a first frequency unit, wherein the first OFDM symbol carries the first security measurement signal, the first time unit comprises the first OFDM symbol, and the first frequency unit comprises a frequency resource used for transmitting the first security measurement signal.

16. The method according to claim 15, wherein the first time unit is comprised in a plurality of consecutive time units; based on a preset frequency unit number sequence for transmission, frequency hopping transmission is performed on a signal carried in the plurality of consecutive time units; and the number of the first frequency unit belongs to the preset frequency unit number sequence.

17. The method according to claim 14, wherein the first communication parameter is associated with a position of a first OFDM symbol relative to a second OFDM symbol, the first OFDM symbol carries the first security measurement signal, the second OFDM symbol carries a second security measurement signal, and the first communication parameter corresponding to the second security measurement signal is a preset value.

18. The method according to any one of claims 14 to 17, wherein obtaining the first measurement sequence based on the first security parameter and the first security measurement signal comprises:

descrambling the second measurement sequence by using the first security parameter, to obtain the first measurement sequence;

or

performing exclusive OR on the first security parameter and the second measurement sequence, to obtain the first measurement sequence.

19. A communication apparatus, comprising a processing unit and a communication unit, wherein the communication apparatus is configured to implement the ranging method according to any one of claims 1 to 13.

20. A communication apparatus, comprising an obtaining unit and a sending unit, wherein the communication apparatus is configured to implement the ranging method according to any one of

claims 14 to 18.