CLAIMS

1. A sensing method for sensing a passive target, performed by a second node, comprising:

receiving, by the second node, first information from a first node, wherein the first information comprises transmit beam information of the first node;

receiving, by the second node, a reference signal and an echo signal based on the transmit beam information; and

sensing, by the second node, a motion feature of the passive target based on the reference signal and the echo signal;

wherein

the transmit beam information comprises information of an initial scanning angle of a first transmit beam used to transmit a first illumination signal and a scanning direction of the first transmit beam used to transmit the first illumination signal, wherein the first illumination signal is reflected by the passive target to form the echo signal;

wherein

the transmit beam information further comprises: a quantity of transmit beams and a beam angle of a second transmit beam used to transmit a second illumination signal, wherein the second illumination signal is sent from the first node to the second node along a line of sight to form the reference signal;

the receiving, by the second node, an echo signal based on the transmit beam information comprises: receiving, by the second node, the echo signal by using a beam corresponding to the first transmit beam; and

the receiving, by the second node, a reference signal based on the transmit beam information comprises: receiving, by the second node, the reference signal by using a beam corresponding to the second transmit beam, or receiving the reference signal omnidirectionally in space.

2. The sensing method according to claim 1, wherein the receiving, by a second node, first information from a first node comprises: receiving, by the second node, an NDPA frame from the first node, wherein the NDPA frame comprises the first information.

3. The sensing method according to claim 2, wherein the NDPA frame further comprises one or a combination of the following: frame type information, frame subtype information, and association identifier information; and

a frame type comprises a sensing type, and/or a frame subtype comprises a sensing subtype; the frame type information is comprised in frame control information, or is comprised in sounding dialog token information; the frame subtype information is comprised in the frame control information, or is comprised in station information; the association identifier is configured to a preset value, the association identifier is used to indicate that the NDPA frame is used for sensing, and the association identifier is used to indicate beam setting; and the frame subtype is further

used to indicate sensing of dual channels, and the dual channels respectively correspond to the reference signal and the echo signal.

4. The sensing method according to any one of claims 1 to 3, wherein the method further comprises:

receiving, by the second node, a first trigger frame from the first node, wherein the first trigger frame is used to trigger the second node to feed back sensing information; and

transmitting, by the second node, the sensing information to the first node, wherein

the first trigger frame comprises feedback type information, the feedback type information is used to indicate a type of the sensing information, and the type of the sensing information comprises one or a combination of the following: raw information, a sensing result of the raw information, and a signal processing result of the raw information.

5. The sensing method according to claim 4, wherein the first trigger frame further comprises one or a combination of the following: subtype information of the first trigger frame and type information of the first trigger frame; a subtype of the first trigger frame comprises triggering the second node to feed back the sensing information; and a type of the first trigger frame comprises sensing.

6. A sensing method for sensing a passive target, performed by a first node, comprising:

generating, by the first node, one or more pieces of first information; and

transmitting, by the first node, the one or more pieces of first information to each of one or more second nodes, wherein

the first information comprises transmit beam information of the first node to cause each second node to sense a motion feature of the passive target based on the reference signal and the echo signal,

wherein

the transmit beam information comprises information of an initial scanning angle of a first transmit beam used to transmit a first illumination signal and a scanning direction of the first transmit beam used to transmit the first illumination signal, wherein the first illumination signal is reflected by the passive target to form the echo signal;

wherein

the transmit beam information further comprises: a quantity of transmit beams and a beam angle of a second transmit beam used to transmit a second illumination signal, wherein the second illumination signal is sent from the first node to the second node along a line of sight to form the reference signal.

7. The sensing method according to claim 6, wherein the transmitting, by the first node, the first information to a second node comprises: transmitting, by the first node, an NDPA frame to the second node, wherein the NDPA frame comprises the first information.

8. The sensing method according to claim 7, wherein the NDPA frame further comprises one or a combination of the following: frame type information, frame subtype information, and association identifier information; and

a frame type comprises a sensing type, and/or a frame subtype comprises a sensing subtype; the frame type information is comprised in frame control information, or is comprised in sounding dialog token information; the frame subtype information is comprised in the frame control information, or is comprised in station information; the association identifier is configured to a preset value, and the association identifier is used to indicate beam setting; and the frame subtype is further used to indicate sensing of dual channels, and the dual channels respectively correspond to the reference signal and the echo signal.

9. The sensing method according to any one of claims 6 to 8, wherein the method further comprises:

transmitting, by the first node, an illumination signal to each of the one or more second nodes;

transmitting, by the first node, a first trigger trigger frame to the one or more second nodes, wherein the first trigger frame is used to trigger the one or more second nodes to feed back sensing information;

receiving, by the first node, one or more pieces of sensing information from the one or more second nodes; and

fusing, by the first node, the one or more pieces of sensing information.

10. The sensing method according to claim 9, wherein the first trigger frame comprises feedback type information, the feedback type information is used to indicate a type of the sensing information, and the type of the sensing information comprises one or a combination of the following: raw information, a sensing result of the raw information, and a signal processing result of the raw information.

11. The sensing method according to claim 9 or 10, wherein the first trigger frame further comprises one or a combination of the following: subtype information of the first trigger frame and type information of the first trigger frame; a subtype of the first trigger frame comprises triggering the second node to feed back the sensing information; and a type of the first trigger frame comprises sensing.

12. A sensing method for sensing a passive target, comprising:

generating, by a first node, second information wherein the second information comprises transmit beam information of a second node, and sending the second information to the second node;

receiving, by the second node, the second information from the first node;

transmitting, by the second node, a first illumination signal and a second illumination signal, based on the transmit beam information, wherein the first illumination signal is reflected by the passive target to form an echo signal and wherein the second illumination signal is sent from the first node to the second node along a line of sight to form a reference signal; and

receiving, by the first node, the echo signal and the reference signal corresponding to the first illumination signal

and the second illumination signal respectively, and performing sensing based on the reference signal and the echo signal;

the transmit beam information comprises information of an initial scanning angle of a first transmit beam used to transmit a first illumination signal and a scanning direction of the first transmit beam used to transmit the first illumination signal, wherein the first illumination signal is reflected by the passive target to form the echo signal;

and wherein

the transmit beam information comprises one or a combination of the following: a quantity of transmit beams, a beam angle of a transmit beam used to transmit the illumination signal;

the receiving, by the first node, an echo signal comprises: receiving, by the first node, the echo signal by using a beam corresponding to the first transmit beam; and/or

the receiving, by the first node, a reference signal comprises: receiving, by the first node, the reference signal by using a beam corresponding to the second transmit beam, or receiving the reference signal omnidirectionally in space;

wherein the receiving, by a second node, second information from a first node comprises: receiving, by the second node, a second trigger frame from the first node, wherein the second trigger frame comprises the second information;

wherein the second trigger frame further comprises one or a combination of the following: frame type information and frame subtype information; and

a frame type comprises a sensing type, and a frame subtype comprises triggering the second node to transmit the illumination signal.

13. A communication apparatus, configured to perform the steps performed by a second node according to any one of claims 1-5, or configured to perform the steps performed by a first node according to any one of claims 6 to 11, or configured to perform the steps performed by a first node according to claim 12.