CLAIMS

1. A monostatic sensing method, applied to a first device and comprising:

performing monostatic sensing based on a first frame structure, to obtain a first sensing result;

receiving a first request frame sent by a second device, wherein the first request frame is used to request to obtain a monostatic sensing result; and

sending a first response frame to the second device based on the first request frame, wherein the first response frame comprises the first sensing result.

2. The method according to claim 1, wherein if the first device is a personal basic service set control point or an access point, the first frame structure comprises one of the following: a directional multigigabit (DMG) beacon frame, a data frame, or a beam refinement protocol (BRP); or

if the first device is a station, the first frame structure comprises one of the following: a sector sweep SSW, a short SSW, a BRP, or a data frame.

3. The method according to claim 1 or 2, wherein the method further comprises:

receiving first information and second information sent by the second device, wherein the first information is used to request the first device to perform monostatic sensing, the second information is used to request to obtain target beam information and target location information, the target beam information is beam information for sending the first frame structure by the first device, and the target location information is information about a location of the first device for sending the first frame structure;

sending the target beam information and the target location information to the second device based on the second information; and

the performing monostatic sensing based on a first frame structure, to obtain a first sensing result comprises:

performing monostatic sensing based on the first information and the first frame structure, to obtain the first sensing result.

4. The method according to claim 3, wherein the first information and the second information are separately comprised in different elements of an information request frame; or

the first information and the second information are separately comprised in different request frames; or

the first information and the second information are comprised in a passive sensing information element of an information request frame.

5. The method according to claim 3 or 4, wherein the method further comprises:

sending third information and fourth information, wherein the third information is used to

announce that the first device has a monostatic sensing capability, and the fourth information is used to announce that the first device has a passive sensing capability.

6. The method according to claim 5, wherein the third information and the fourth information are comprised in a second frame structure; and

if the first device is the personal basic service set control point or the access point, the second frame structure is one or more of the following: an association request frame, an association response frame, a reassociation request frame, a reassociation response frame, a directional multigigabit DMG beacon frame, an information request frame, an information response frame, a probe request frame, a probe response frame, or a data frame; or

if the first device is the station, the second frame structure is one or more of the following: an association request frame, an association response frame, a reassociation request frame, a reassociation response frame, an information request frame, an information response frame, a probe request frame, a probe response frame, an SSW frame, a short SSW frame, or a data frame.

7. The method according to claim 1 or 2, wherein the method further comprises:

sending fifth information, wherein the fifth information is used to announce that the first device performs monostatic sensing based on the first frame structure.

8. The method according to claim 7, wherein if the first device is the personal basic service set control point or the access point, the first frame structure is a DMG beacon frame in a current or next beacon transmission interval (BTI), or the first frame structure is a data frame in a current or next data transmission interval (DTI), or the first frame structure is a BRP in a current or next DTI; or

if the first device is the station, the first frame structure is an SSW or a short SSW in current or next A-BFT, or the first frame structure is a data frame in a current or next DTI, or the first frame structure is a BRP in a current or next DTI.

9. The method according to claim 7 or 8, wherein the fifth information is comprised in a third frame structure; and

if the first device is the personal basic service set control point or the access point, the third frame structure is one or more of the following: an association request frame, an association response frame, a reassociation request frame, a reassociation response frame, a DMG beacon frame, an information request frame, an information response frame, a probe request frame, a probe response frame, or a data frame; or

if the first device is the station, the third frame structure is one or more of the following: an association request frame, an association response frame, a reassociation request frame, a reassociation response frame, an information request frame, an information response frame, a probe request frame, a probe response frame, an SSW frame, a short SSW frame, or a data frame.

10. The method according to any one of claims 7 to 9, wherein the first request frame is further used to request to obtain target beam information and target location information, the target beam information is beam information for sending the first frame structure by the first device, the target location information is information about a location of the first device for sending the first frame structure, and the method further comprises:

sending the target beam information and the target location information to the second device based on the first request frame.

11. The method according to any one of claims 7 to 9, wherein the method further comprises:

receiving a second request frame sent by the first device, wherein the second request frame is used to request to obtain target beam information and target location information, the target beam information is beam information for sending the first frame structure by the first device, and the target location information is information about a location of the first device for sending the first frame structure; and

sending the target beam information and the target location information to the second device based on the second request frame.

12. A monostatic sensing method, applied to a second device and comprising:

sending a first request frame to a first device, wherein the first request frame is used to request to obtain a monostatic sensing result; and

receiving a first response frame sent by the first device, wherein the first response frame comprises a first sensing result of monostatic sensing performed by the first device based on a first frame structure.

13. The method according to claim 12, wherein if the first device is a personal basic service set control point or an access point, the first frame structure comprises one of the following: a DMG beacon frame, a data frame, or a beam refinement protocol BRP; or

if the first device is a station, the first frame structure comprises one of the following: a sector sweep SSW, a short SSW, a BRP, or a data frame.

14. The method according to claim 12 or 13, wherein the method further comprises:

sending first information and second information to the first device, wherein the first information is used to request the first device to perform monostatic sensing, the second information is used to request to obtain target beam information and target location information, the target beam information is beam information for sending the first frame structure by the first device, and the target location information is information about a location of the first device for sending the first frame structure;

receiving the target beam information and the target location information that are sent by the first device;

performing passive sensing based on the first frame structure, the target beam information, and the target location information; and

parsing the first sensing result based on the target beam information and the target location information.

15. The method according to claim 14, wherein the method further comprises:

receiving third information and fourth information that are sent by the first device, wherein the third information is used to announce that the first device has a capability of monostatic sensing based on the first frame structure, and the fourth information is used to announce that the first device has a capability of passive sensing based on the first frame structure;

sending the first information to the first device based on the third information; and

sending the second information to the first device based on the third information and/or the fourth information.

16. The method according to claim 15, wherein the third information and the fourth information are comprised in a second frame structure; and

if the first device is the personal basic service set control point or the access point, the second frame structure is one or more of the following: an association request frame, an association response frame, a reassociation request frame, a reassociation response frame, a DMG beacon frame, an information request frame, an information response frame, a probe request frame, a probe response frame, or a data frame; or

if the first device is the station, the second frame structure is one or more of the following: an association request frame, an association response frame, a reassociation request frame, a reassociation response frame, an information request frame, an information response frame, a probe request frame, a probe response frame, an SSW frame, a short SSW frame, or a data frame.

17. The method according to claim 12 or 13, wherein the method further comprises:

receiving fifth information sent by the first device, wherein the fifth information is used to announce that the first device performs monostatic sensing based on the first frame structure; and

the sending a first request frame to a first device comprises:

sending the first request frame to the first device based on the fifth information.

18. The method according to claim 17, wherein if the first device is the personal basic service set control point or the access point, the first frame structure is a DMG beacon frame in a current or next BTI, or the first frame structure is a data frame in a current or next DTI, or the first frame structure is a BRP in a current or next DTI; or

if the first device is the station, the first frame structure is an SSW or a short SSW in current or next A-BFT, or the first frame structure is a data frame in a current or next DTI, or the first frame structure is a BRP in a current or next DTI.

19. The method according to claim 17 or 18, wherein the fifth information is comprised in a third frame structure; and

if the first device is the personal basic service set control point or the access point, the third frame structure is one or more of the following: an association request frame, an association response frame, a reassociation request frame, a reassociation response frame, a DMG beacon frame, an information request frame, an information response frame, a probe request frame, a probe response frame, or a data frame; or

if the first device is the station, the third frame structure is one or more of the following: an association request frame, an association response frame, a reassociation request frame, a reassociation response frame, an information request frame, an information response frame, a probe request frame, a probe response frame, an SSW frame, a short SSW frame, or a data frame.

20. The method according to any one of claims 17 to 19, wherein the first request frame is further used to request to obtain target beam information and target location information, the target beam information is beam information for sending the first frame structure by the first device, the target location information is information about a location of the first device for sending the first frame structure, and the method further comprises:

receiving the target beam information and the target location information that are sent by the first device; and

parsing the first sensing result based on the target beam information and the target location information.

21. The method according to any one of claims 17 to 19, wherein the method further comprises:

sending a second request frame to the first device, wherein the second request frame is used to request to obtain target beam information and target location information, the target beam information is beam information for sending the first frame structure by the first device, and the target location information is information about a location of the first device for sending the first frame structure;

receiving the target beam information and the target location information that are sent by the first device; and

parsing the first sensing result based on the target beam information and the target location information.

22. A communication apparatus, comprising:

a processing module, configured to perform monostatic sensing based on a first frame structure, to obtain a first sensing result; and

a transceiver module, configured to receive a first request frame sent by a second device,

wherein the first request frame is used to request to obtain a monostatic sensing result, wherein

the transceiver module is further configured to send a first response frame to the second device based on the first request frame, wherein the first response frame comprises the first sensing result.

23. A communication apparatus, comprising:

a processing module, configured to generate a first request frame, wherein the first request frame is used to request to obtain a monostatic sensing result; and

a transceiver module, configured to send the first request frame to the first device, wherein the first request frame is used to request to obtain the monostatic sensing result, wherein

the transceiver module is further configured to receive a first response frame sent by the first device, wherein the first response frame comprises a first sensing result of monostatic sensing performed by the first device based on a first frame structure.

24. A computer-readable storage medium, wherein the computer-readable storage medium stores a computer program, wherein the computer program comprises program instructions, and when the program instructions are executed by a processor, the processor is enabled to perform the method according to any one of claims 1 to 11, or the processor is enabled to perform the method according to any one of claims 12 to 21.

25. A communication apparatus, comprising a processor and a memory, wherein

the memory is configured to store a computer program or instructions; and

the processor is configured to execute the computer program or the instructions in the memory, so that the method according to any one of claims 1 to 11 is performed, or the method according to any one of claims 12 to 21 is performed.