CLAIMS

1. A method for determining a change in a distance, comprising:

sending, by a first device, a pairing request to a server, wherein the pairing request is forwarded by the server to a second device;

receiving, by the first device from the server, a pairing result indicating that the first device is successfully paired with the second device and information about a frequency band of acoustic waves allocated by the server to the first device and the second device, wherein the allocated frequency band is different from a plurality of other frequency bands respectively associated with a plurality of other pairs of devices;

acquiring, by the first device from the second device, a plurality of acoustic wave signals of a frequency within the allocated frequency band, wherein the acoustic wave signals are acquired periodically;

determining, by the first device, one or more differences between magnitudes of energy of two consecutive acoustic wave signals among the plurality of acoustic wave signals;

determining, by the first device, a change in a distance between the second device and the first device according to the one or more differences between the magnitudes of energy; and

generating, by the first device, prompt information corresponding to the change in the distance between the second device and the first device.

2. The method according to claim 1, wherein the acoustic wave signals of the frequency are selected by the second device from acoustic waves corresponding to the allocated frequency band.

3. The method according to claim 1, wherein the frequency band is allocated by the server based on the server determining that the distance between the first device and the second device is within a preset distance range.

4. The method according to claim 1, wherein one or more other frequency bands are allocated to the first device and the second device by the server, and wherein each of the acoustic wave signals of the frequency from the second device are superimposed with one or more other acoustic wave signals of one or more other frequencies respectively within the one or more other

frequency bands.

5. The method according to claim 1, wherein after the generating the prompt information corresponding to the change in the distance between the second device and the first device, the method further comprises:

sending, by the first device, the prompt information to the second device.

6. The method according to claim 1, wherein after the generating the prompt information corresponding to the change in the distance between the second device and the first device, the method further comprises:

sending, by the first device, through the server, the prompt information to the second device.

7. The method according to claim 1, further comprising presenting the prompt information with a sound, a picture, an animation, or a vibration.

8. The method according to claim 7, wherein when the prompt information is presented with a sound, before the generating the prompt information, the method further comprises:

establishing a correspondence between the magnitude of energy of an acoustic wave signal and a volume of the sound of the prompt information.

9. A method for determining a change in a distance, comprising:

receiving, by a second device, a pairing request sent by a first device through a server;

accepting, by the second device, the pairing request;

receiving, by the second device from the server, information about a frequency band of acoustic waves allocated by the server to the first device and the second device, wherein the allocated frequency band is different from a plurality of other frequency bands respectively associated with a plurality of other pairs of devices;

determining, by the second device, a frequency within the frequency band allocated by the server;

sending, by the second device to the first device, a plurality of acoustic wave signals of

the frequency periodically;

receiving, by the second device from the first device, information of the acoustic wave signals as received by the first device;

determining, by the second device, one or more differences between magnitudes of energy of two consecutive acoustic wave signals among the plurality of acoustic wave signals based on the information of the acoustic wave signals from the first device;

determining, by the second device, a change in a distance between the first device and the second device according to the one or more differences between the magnitudes of energy; and

generating, by the second device, prompt information corresponding to the change in the distance between the first device and the second device.

10. The method according to claim 9, wherein the receiving, by the second device from the first device, information of the acoustic wave signals as received by the first device comprises:

receiving, by the second device from the first device, information on energy of the acoustic wave signals.

11. An apparatus for determining a change in a distance, wherein the apparatus is located in a first device, comprising: one or more processors and one or more non-transitory computer-readable memories coupled to the one or more processors and configured with instructions executable by the one or more processors to cause the apparatus to perform operations comprising:

sending a pairing request to a server, wherein the pairing request is forwarded by the server to a second device;

receiving, from the server, a pairing result indicating that the first device is successfully paired with the second device and information about a frequency band of acoustic waves allocated by the server to the first device and the second device, wherein the allocated frequency band is different from a plurality of other frequency bands respectively associated with a plurality of other pairs of devices;

acquiring, from the second device, a plurality of acoustic wave signals of a frequency within the allocated frequency band, wherein the acoustic wave signals are acquired periodically;

determining one or more differences between magnitudes of energy of two consecutive acoustic wave signals among the plurality of acoustic wave signals;

determining a change in a distance between the second device and the first device according to the one or more differences between the magnitudes of energy; and

generating prompt information corresponding to the change in the distance between the second device and the first device.

12. The apparatus according to claim 11, wherein the acoustic wave signals of the frequency are selected by the second device from acoustic waves corresponding to the allocated frequency band.

13. The apparatus according to claim 11, wherein the operations further comprise:

sending the prompt information to the second device.

14. The apparatus according to claim 11, wherein the frequency band is allocated by the server based on the server determining that the distance between the first device and the second device is within a preset distance range.

15. The apparatus according to claim 11, wherein one or more other frequency bands are allocated to the first device and the second device by the server, and wherein each of the acoustic wave signals of the frequency from the second device are superimposed with one or more other acoustic wave signals of one or more other frequencies respectively within the one or more other frequency bands.

16. The apparatus according to claim 11, wherein the operations further comprise:

sending, through the server, the prompt information to the second device.

17. The apparatus according to claim 11, wherein the operations further comprise:

presenting the prompt information with a sound, a picture, an animation, or a vibration.