CLAIMS

What is claimed is:

1. A method for reporting information, applied to a terminal device and comprising:

receiving indication information from a network device, wherein the indication information is used to indicate the terminal device to report phase information of at least one target path corresponding to a downlink channel; wherein the indication information comprises a relative delay of the at least one target path with respect to a reference path, and the relative delay of the at least one target path with respect to the reference path is used by the terminal device to determine a location of the at least one target path in an impulse response of the downlink channel; and

reporting the phase information of the at least one target path to the network device according to the indication information.

2. The method according to claim 1, wherein the at least one target path meets at least one of the following conditions:

the at least one target path comprises no reference path;

the at least one target path comprises top N paths with the greatest strength(s) among a plurality of paths corresponding to the downlink channel, wherein N is a positive integer; and

the at least one target path comprises path(s) with a strength greater than or equal to a preset threshold among the plurality of paths corresponding to the downlink channel.

3. The method according to claim 2, wherein

N is a protocol-defined value or pre-configured by the network device; and

the preset threshold is a protocol-defined value or pre-configured by the network device.

4. The method according to claim 1, wherein before reporting the phase information of the at least one target path to the network device, the method further comprises:

determining, based on the impulse response of the downlink channel and the relative delay of the at least one target path, the phase information of the at least one target path, wherein the impulse response of the downlink channel is determined based on a channel state information reference signal CSI-RS delivered by the network device.

5. The method according to claim 4, wherein the determining, based on the impulse response of the downlink channel and the relative delay of the at least one target path, the phase information of the at least one target path comprises:

determining, based on a delay of a reference path corresponding to the downlink channel and the relative delay of the at least one target path, a delay of the at least one target path, wherein the reference path corresponding to the downlink channel is the same as a reference path corresponding to an uplink channel;

determining, based on the delay of the at least one target path and the impulse response of the downlink channel, an impulse response component of a corresponding target path; and

determining, based on the impulse response component, the phase information of the at least one target path.

6. The method according to claim 1, wherein the reporting the phase information of the at least one target path to the network device comprises:

quantizing the phase information of the at least one target path to obtain quantized phase information; and

reporting the quantized phase information to the network device.

7. The method according to claim 1, wherein the reporting the phase information of the at least one target path to the network device comprises at least one of the following:

transmitting a physical uplink control channel PUCCH to the network device, wherein the PUCCH comprises the phase information of the at least one target path; and

transmitting a physical uplink shared channel PUSCH to the network device, wherein the PUSCH comprises the phase information of the at least one target path.

8. The method according to claim 1, wherein the reporting the phase information of the at least one target path to the network device comprises:

reporting the phase information of the at least one target path to the network device in a manner of periodic reporting, aperiodic reporting, or semi-persistent reporting.

9. A method for indicating information, applied to a network device and comprising:

transmitting indication information to a terminal device, wherein the indication information is used to indicate the terminal device to report phase information of at least one target path corresponding to a downlink channel, wherein the indication information comprises a relative delay of the at least one target path with respect to a reference path, and the relative delay of the at least one target path with respect to the reference path is used by the terminal device to determine a location of the at least one target path in an impulse response of the downlink channel.

10. The method according to claim 9, wherein the at least one target path meets at least one of the following conditions:

the at least one target path comprises no reference path;

the at least one target path comprises top N paths with the greatest strength(s) among a plurality of paths corresponding to the downlink channel, wherein N is a positive integer; and

the at least one target path comprises path(s) with a strength greater than or equal to a preset threshold among the plurality of paths corresponding to the downlink channel.

11. The method according to claim 10, wherein

N is a protocol-defined value or pre-configured by the network device; and

the preset threshold is a protocol-defined value or pre-configured by the network device.

12. The method according to claim 9, wherein before the indication information is transmitted to the terminal device, the method further comprises:

determining, based on a sounding reference signal SRS transmitted by the terminal device, an impulse response of an uplink channel; and

determining, based on the impulse response of the uplink channel, the relative delay of the at least one target path.

13. The method according to claim 12, wherein the determining, based on the impulse response of the uplink channel, the relative delay of the at least one target path comprises:

determining, based on the impulse response, an impulse response component of the at least one target path;

determining, based on the impulse response component of the at least one target path, a delay of the at least one target path; and

determining, based on a delay of a reference path corresponding to the uplink channel and the delay of the at least one target path, the relative delay of the at least one target path.

14. The method according to claim 13, wherein

the reference path is a path with a greatest strength among a plurality of paths corresponding to the uplink channel.

15. The method according to claim 13, wherein the relative delay of the at least one target path comprises at least one of the following:

a relative delay determined based on a bitmap and a location of the reference path in the bitmap;

relative delays of a start path and an end path of the at least one target path with respect to the reference path;

a relative delay of the at least one target path with respect to the reference path; and

a relative delay of a second path of the at least one target path with respect to a first path of the at least one target path; wherein

the first path and the second path are two adjacent paths in the at least one target path, and in a case that the first path is a first target path, a relative delay of the first path is a delay with respect to the reference path.

16. The method according to claim 9, wherein the transmitting indication information to a terminal device comprises at least one of the following:

transmitting radio resource control RRC signaling to the terminal device, wherein the RRC signaling comprises the indication information;

transmitting media access control control element MAC-CE signaling to the terminal device, wherein the MAC-CE signaling comprises the indication information; and

transmitting downlink control information DCI to the terminal device, wherein the DCI comprises the indication information.

17. A terminal device, comprising:

a receiving module, configured to receive indication information from a network device, wherein the indication information is used to indicate the terminal device to report phase information of at least one target path corresponding to a downlink channel; wherein the indication information comprises a relative delay of the at least one target path with respect to a reference path, and the relative delay of the at least one target path with respect to the reference path is used by the terminal device to determine a location of the at least one target path in an impulse response of the downlink channel; and

a reporting module, configured to report the phase information of the at least one target path to the network device according to the indication information.

18. A network device, comprising:

a transmitting module, configured to transmit indication information to a terminal device, wherein the indication information is used to indicate the terminal device to report phase information of at least one target path corresponding to a downlink channel, wherein the indication information comprises a relative delay of the at least one target path with respect to a reference path, and the relative delay of the at least one target path with respect to the reference path is used by the terminal device to determine a location of the at least one target path in an impulse response of the downlink channel.

19. A terminal device, comprising a processor, a memory, and a computer program stored in the memory and capable of running on the processor, wherein

when the computer program is executed by the processor, the steps of the method according to any one of claims 1 to 8 are implemented.

20. A network device, comprising a processor, a memory, and a computer program stored in the memory and capable of running on the processor, wherein when the computer program is executed by the processor, the steps of the method according to any one of claims 9 to 16 are implemented.