CLAIMS

What is claimed is:

1. A channel information processing method, applied to a network-side device, and comprising:

receiving first information and second information from a terminal, wherein the first information comprises a first parameter without uplink/downlink channel reciprocity, the first parameter is determined based on downlink channel estimation, the second information is used to indicate a deviation between a second parameter and a third parameter that have uplink/downlink channel reciprocity, the second parameter is determined based on uplink channel estimation, and the third parameter is determined based on downlink channel estimation; and

determining channel information of a downlink channel based on the first information, the second information, and the second parameter.

2. The method according to claim 1, wherein before the receiving first information and second information from a terminal, the method further comprises:

performing channel estimation on an uplink channel and determining the second parameter from a channel estimation result; and

transmitting the second parameter to the terminal.

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

receiving third information from the terminal, wherein the third information comprises a fourth parameter corresponding to a first path, and the first path is different from a path corresponding to the second parameter.

4. The method according to claim 3, wherein the determining channel information of a downlink channel comprises:

determining the channel information of the downlink channel based on the first information, the second information, the third information, and the second parameter.

5. The method according to claim 1, wherein the second parameter and the third parameter each comprise a delay of a target path and/or a spatial angle of the target path.

6. The method according to claim 5, wherein the target path is at least one of the following: a path indicated by the network-side device, a path for which the deviation between the second parameter and the third parameter is greater than a threshold, and a path discovered by the terminal.

7. The method according to claim 5, wherein in a case that the second parameter and the third parameter each comprise a delay of a target path and a spatial angle of the target path, the second information is used to indicate a deviation between a delay in the second parameter and a delay in the third parameter.

8. The method according to claim 2, wherein the performing channel estimation on an uplink channel and determining the second parameter from a channel estimation result comprises:

performing estimation on uplink channel information to obtain a first uplink channel estimation result in frequency domain;

performing Fourier transform on the first uplink channel estimation result to obtain a second uplink channel estimation result in time domain; and

determining a delay of a target path and/or a spatial angle of the target path from the second uplink channel estimation result.

9. The method according to claim 1, wherein the determining channel information of a downlink channel based on the first information, the second information, and the second parameter comprises:

inputting the first information to a target neural network to obtain fourth information; and

determining the channel information of the downlink channel by using the fourth information, the second information, and the second parameter.

10. The method according to claim 9, wherein the target neural network is obtained by training an initial neural network through a preset training set, and the preset training set comprises first information obtained at a plurality of historical moments.

11. The method according to claim 10, wherein the first parameter in the first information is a gain of a target path.

12. A channel information processing method, applied to a terminal, and comprising:

transmitting first information and second information to a network-side device, wherein the first information comprises a first parameter without uplink/downlink channel reciprocity, the first parameter is determined based on downlink channel estimation, the second information is used to indicate a deviation between a second parameter and a third parameter that have uplink/downlink channel reciprocity, the second parameter is determined based on uplink channel estimation, and the third parameter is determined based on downlink channel estimation.

13. The method according to claim 12, wherein before the transmitting first information and second information to a network-side device, the method comprises:

performing channel estimation on a downlink channel, and determining the first parameter and the third parameter from a channel estimation result.

14. The method according to claim 12, wherein before the transmitting first information and second information to a network-side device, the method further comprises:

receiving the second parameter transmitted by the network-side device.

15. The method according to claim 12, wherein the method comprises:

transmitting third information to the network-side device, wherein the third information comprises a fourth parameter corresponding to a first path, and the first path is different from a path corresponding to the second parameter.

16. The method according to claim 14, wherein the second parameter and the third parameter each comprise a delay of a target path and/or a spatial angle of the target path.

17. The method according to claim 16, wherein in a case that the second parameter and the third parameter each comprise a delay of a target path and a spatial angle of the target path, the second information is used to indicate a deviation between a delay in the second parameter and a delay in the third parameter.

18. The method according to claim 13, wherein the performing channel estimation on a downlink channel, and determining the first parameter from a channel estimation result comprises:

performing channel estimation on the downlink channel to obtain a first downlink channel estimation result in frequency domain;

performing two-dimensional Fourier transform on the first downlink channel estimation result to obtain a second downlink channel estimation result in time domain; and

determining a delay of a target path and/or a spatial angle of the target path from the second downlink channel estimation result.

~~19. A channel information processing apparatus, comprising:~~

~~a first receiving module, configured to receive first information and second information from a terminal, wherein the first information comprises a first parameter without uplink/downlink channel reciprocity, the first parameter is determined based on downlink channel estimation, the second information is used to indicate a deviation between a second parameter and a third parameter that have uplink/downlink channel reciprocity, the second parameter is determined based on uplink channel estimation, and the third parameter is determined based on downlink channel estimation; and~~

~~a first determining module, configured to determine channel information of a downlink channel based on the first information, the second information, and the second parameter.~~

~~20. The apparatus according to claim 19, wherein the apparatus further comprises:~~

~~a first processing module, configured to: before the first information and the second information are received from the terminal, perform channel estimation on an uplink channel and determine the second parameter from a channel estimation result; and~~

~~a first transmitting module, configured to transmit the second parameter to the terminal.~~

~~21. The apparatus according to claim 19, further comprising:~~

~~a second receiving module, configured to receive third information from the terminal, wherein the third information comprises a fourth parameter corresponding to a first path, and the first path is different from a path corresponding to the second parameter.~~

~~22. The apparatus according to claim 21, wherein the first determining module is further configured to determine the channel information of the downlink channel based on the first information, the second information, the third information, and the second parameter.~~

~~23. The apparatus according to claim 19, wherein the second parameter and the third parameter each comprise a delay of a target path and/or a spatial angle of the target path.~~

~~24. The apparatus according to claim 23, wherein the target path is at least one of the following: a path indicated by the network-side device, a path for which the deviation between the second parameter and the third parameter is greater than a threshold, and a path discovered by the terminal.~~

~~25. The apparatus according to claim 23, wherein in a case that the second parameter and the third parameter each comprise a delay of a target path and a spatial angle of the target path, the second information is used to indicate a deviation between a delay in the second parameter and a delay in the third parameter.~~

~~26. The apparatus according to claim 20, wherein the first processing module comprises:~~

~~a first processing unit, configured to perform estimation on uplink channel information to obtain a first uplink channel estimation result in frequency domain;~~

~~a second processing unit, configured to perform Fourier transform on the first uplink channel estimation result to obtain a second uplink channel estimation result in time domain; and~~

~~a third processing unit, configured to determine a delay of a target path and/or a spatial angle of the target path from the second uplink channel estimation result.~~

~~27. The apparatus according to claim 19, wherein the first determining module comprises:~~

~~a first input unit, configured to input the first information to a target neural network to obtain fourth information; and~~

~~a first determining unit, configured to determine the channel information of the downlink channel by using the fourth information, the second information, and the second parameter.~~

~~28. The apparatus according to claim 27, wherein the target neural network is obtained by training an initial neural network through a preset training set, and the preset training set comprises first information obtained at a plurality of historical moments.~~

~~29. The apparatus according to claim 28, wherein the first parameter in the first information is a gain of a target path.~~

~~30. A channel information processing apparatus, comprising:~~

~~a second transmitting module, configured to transmit first information and second information to a network-side device, wherein the first information comprises a first parameter without uplink/downlink channel reciprocity, the first parameter is determined based on downlink channel estimation, the second information is used to indicate a deviation between a second parameter and a third parameter that have uplink/downlink channel reciprocity, the second parameter is determined based on uplink channel estimation, and the third parameter is determined based on downlink channel estimation.~~

~~31. The apparatus according to claim 30, wherein the apparatus comprises:~~

~~a second processing module, configured to: before the first information and the second information are transmitted to the network-side device, perform channel estimation on a downlink channel, and determine the second parameter and the third parameter from a channel estimation result.~~

~~32. The apparatus according to claim 30, wherein the apparatus further comprises:~~

~~a third receiving module, configured to: before the first information and the second information are transmitted to the network-side device, receive the second parameter transmitted by the network-side device.~~

~~33. The apparatus according to claim 30, wherein the apparatus comprises:~~

~~a third transmitting module, configured to transmit third information to the network-side device, wherein the third information comprises a fourth parameter~~

~~corresponding to a first path, and the first path is different from a path corresponding to the second parameter.~~

~~34. The apparatus according to claim 30, wherein the second parameter and the third parameter each comprise a delay of a target path and/or a spatial angle of the target path.~~

~~35. The apparatus according to claim 34, wherein in a case that the second parameter and the third parameter each comprise a delay of a target path and a spatial angle of the target path, the second information is used to indicate a deviation between a delay in the second parameter and a delay in the third parameter.~~

~~36. The apparatus according to claim 31, wherein the second processing module comprises:~~

~~a fourth processing unit, configured to perform channel estimation on the downlink channel to obtain a first downlink channel estimation result in frequency domain;~~

~~a fifth processing unit, configured to perform two-dimensional Fourier transform on the first downlink channel estimation result to obtain a second downlink channel estimation result in time domain; and~~

~~a sixth processing unit, configured to determine a delay of a target path and/or a spatial angle of the target path from the second downlink channel estimation result.~~

~~37~~19. A terminal, comprising a processor, a memory, and a program or instructions stored in the memory and capable of running on the processor, wherein when the program or instructions are executed by the processor, the steps of the channel information processing method according to any one of claims ~~1 to 11~~12 to 18 are implemented.

~~38~~20. A network-side device, comprising a processor, a memory, and a program or instructions stored in the memory and capable of running on the processor, wherein when the program or instructions are executed by the processor, the steps of the channel information processing method according to any one of claims ~~12 to 18~~1 to 11 are implemented.

~~39. A readable storage medium, wherein the readable storage medium stores a program or instructions, and when the program or instructions are executed by a processor, the steps of the channel information processing method according to any one of claims 1 to 11 are implemented, or the steps of the channel information processing method according to any one of claims 12 to 18 are implemented.~~

~~40. A chip, wherein the chip comprises a processor and a communication interface, the communication interface is coupled to the processor, and the processor is configured to run a program or instructions for a network-side device, to implement the method according to any one of claims 1 to 11, or implement the method according to any one of claims 12 to 18.~~

~~41. A computer program product, wherein the computer program product is executed by at least one processor to implement the method according to any one of claims 1 to 11, or implement the method according to any one of claims 12 to 18.~~

~~42. A terminal, wherein the terminal is configured to perform the method according to any one of claims 1 to 11.~~

~~43. A network-side device, wherein the network-side device is configured to perform the method according to any one of claims 12 to 18.~~