CLAIMS

What is claimed is:

1. A transmission method, comprising:

generating, by a first network device, first information, wherein the first information indicates at least one codebook and a weighting coefficient matrix corresponding to the at least one codebook, and the at least one codebook and a weighting coefficient matrix corresponding to the at least one codebook are used to determine a first beamforming matrix; and

sending, by the first network device, the first information to a second network device.

2. The method according to claim 1, wherein the first information indicates a column vector or a row vector comprised in the at least one codebook.

3. The method according to claim 1 or 2, wherein the at least one codebook comprises a first codebook.

4. The method according to claim 1 or 2, wherein the at least one codebook comprises a first codebook and a second codebook.

5. The method according to any one of claims 1 to 3, wherein the first beamforming matrix comprises a first-stage matrix and a second-stage matrix, the at least one codebook comprises the first codebook and a third codebook, the weighting coefficient matrix corresponding to the at least one codebook corresponds to the first codebook, the first codebook and the weighting coefficient matrix are used to determine the first-stage matrix, and the third codebook is used to determine the second-stage matrix.

6. The method according to any one of claims 1 to 3, wherein the first beamforming matrix comprises a first-stage matrix and a second-stage matrix, the at least one codebook comprises the first codebook, a second codebook, and a third codebook, the weighting coefficient matrix corresponding to the at least one codebook corresponds to the first codebook and the second codebook, the first codebook, the second codebook, and the weighting coefficient matrix are used to determine the first-stage matrix, and the third codebook is used to determine the second-stage matrix.

7. The method according to any one of claims 1 to 6, wherein the method further comprises:

determining, by the first network device based on a second beamforming matrix and at least one codebook set, the at least one codebook and the weighting coefficient matrix corresponding to the at least one codebook, wherein the second beamforming matrix is determined based on one or more of the following: a beamforming matrix determined based on a sounding reference signal (SRS) measurement channel, a beamforming matrix determined based on a channel state information-reference signal (CSI-RS) measurement channel, a beamforming matrix determined

based on a demodulation reference signal (DMRS) measurement channel, and a static beamforming matrix.

8. The method according to claim 7, wherein the determining, by the first network device based on a second beamforming matrix and at least one codebook set, the at least one codebook and the weighting coefficient matrix corresponding to the at least one codebook comprises:

projecting, by the first network device, the second beamforming matrix to the at least one codebook set, to obtain the at least one codebook and the weighting coefficient matrix corresponding to the at least one codebook that maximize a channel capacity and/or maximize a channel throughput.

9. The method according to any one of claims 1 to 6, wherein the method further comprises:

determining, by the first network device based on a first channel matrix and at least one codebook set, the at least one codebook and the weighting coefficient matrix corresponding to the at least one codebook, wherein the first channel matrix is determined based on one or more of the following: a channel matrix determined based on an SRS measurement channel, a channel matrix determined based on a CSI-RS measurement channel, and a channel matrix determined based on a DMRS measurement channel.

10. The method according to claim 9, wherein the determining, by the first network device based on a first channel matrix and at least one codebook set, the at least one codebook and the weighting coefficient matrix corresponding to the at least one codebook comprises:

projecting, by the first network device, the first channel matrix to the at least one codebook set, to obtain the at least one codebook and the weighting coefficient matrix corresponding to the at least one codebook that maximize a channel capacity and/or maximize a channel throughput.

11. The method according to any one of claims 7 to 10, wherein the at least one codebook set comprises at least one of the following: a first codebook set, a second codebook set, and a third codebook set.

12. The method according to any one of claims 3 to 11, wherein the first codebook, the second codebook, or the third codebook is one of the following codebooks: a spatial domain codebook, a frequency domain codebook, or an analog domain codebook.

13. The method according to any one of claims 1 to 12, wherein the first network device is a control device, and the second network device is a radio frequency device; or the first network device is a radio frequency device, and the second network device is a control device.

14. The method according to any one of claims 1 to 12, wherein the first network device is a control device, the second network device is a radio frequency device, and the method further comprises:

sending, by the first network device to a third network device, information indicating the at

least one codebook and the weighting coefficient matrix corresponding to the at least one codebook, wherein the third network device and the second network device belong to different cells.

15. The method according to any one of claims 1 to 12, wherein the first network device is a radio frequency device, the second network device is a control device, and the method further comprises:

performing, by the first network device, beamforming on a signal by using the first beamforming matrix.

16. A transmission method, comprising:

receiving, by a second network device, first information from a first network device, wherein the first information indicates at least one codebook and a weighting coefficient matrix corresponding to the at least one codebook, and the at least one codebook and the weighting coefficient matrix corresponding to the at least one codebook are used to determine a first beamforming matrix; and

determining, by the second network device based on the first information, the at least one codebook and the weighting coefficient matrix corresponding to the at least one codebook.

17. The method according to claim 16, wherein the first information indicates a column vector or a row vector comprised in the at least one codebook.

18. The method according to claim 16 or 17, wherein the at least one codebook comprises a first codebook.

19. The method according to claim 16 or 17, wherein the at least one codebook comprises a first codebook and a second codebook.

20. The method according to any one of claims 16 to 18, wherein the first beamforming matrix comprises a first-stage matrix and a second-stage matrix, the at least one codebook comprises the first codebook and a third codebook, the weighting coefficient matrix corresponding to the at least one codebook corresponds to the first codebook, the first codebook and the weighting coefficient matrix are used to determine the first-stage matrix, and the third codebook is used to determine the second-stage matrix.