

CLAIMS

What is claimed is:

1. A beam information determining method, ~~applied to~~performed by a terminal and comprising:

5 determining a candidate beam information pool of a first set, wherein the first set comprises at least one downlink channel and at least one uplink channel, or the first set comprises at least one channel and at least one reference signal; and the candidate beam information pool comprises at least one piece of candidate beam information; and

10 determining, based on the candidate beam information pool, beam information of at least one of a first channel and a first reference signal that are comprised in the first set.

2. The beam information determining method according to claim 1, wherein in a case that the candidate beam information pool comprises one piece of candidate
15 beam information, the determining, based on the candidate beam information pool, beam information of at least one of a first channel and a first reference signal that are comprised in the first set comprises:

determining, based on the one piece of candidate beam information comprised in the candidate beam information pool, the beam information of at least one of the
20 first channel and the first reference signal that are comprised in the first set.

3. The beam information determining method according to claim 1, wherein in a case that the candidate beam information pool comprises at least two pieces of candidate beam information, the determining, based on the candidate beam information pool, beam information of at least one of a first channel and a first
25 reference signal that are comprised in the first set comprises:

receiving first indication information for at least one of the first channel and the first reference signal that are comprised in the first set, wherein the first indication information is used to indicate one piece of candidate beam information in the candidate beam information pool; and

determining the beam information of at least one of the first channel and the first reference signal based on the first indication information.

~~4. The beam information determining method according to claim 1, wherein a source reference signal of each piece of candidate beam information comprised in the candidate beam information pool is any one of a synchronization signal block SSB, a channel state information reference signal CSI-RS, and a channel sounding reference signal SRS.~~

~~54.~~ The beam information determining method according to claim 1, wherein the determining a candidate beam information pool of a first set comprises:

determining the candidate beam information pool of the first set based on a common candidate beam information pool configured or activated by a network-side device for all objects of the first set;

or,

determining the candidate beam information pool of the first set based on a candidate beam information pool configured or activated by the network-side device for a first object in the first set, wherein other objects in the first set use the candidate beam information pool of the first object as a candidate beam information pool; wherein

the object is at least one of a channel and a reference signal.

~~65.~~ The beam information determining method according to claim 3, further comprising:

determining, based on the beam information of at least one of the first channel and the first reference signal, beam information of at least one of a second channel and a second reference signal that are comprised in the first set.

~~7. The beam information determining method according to claim 6, wherein the determining, based on the beam information of at least one of the first channel and the first reference signal, beam information of at least one of a second channel and a second reference signal that are comprised in the first set comprises:~~

~~determining the beam information of at least one of the second channel and the second reference signal based on an association relationship between at least one of~~

~~the first channel and the first reference signal and at least one of the second channel and the second reference signal, and based on the beam information of at least one of the first channel and the first reference signal.~~

86. The beam information determining method according to claim 65, wherein
5 the determining, based on the beam information of at least one of the first channel and the first reference signal, beam information of at least one of a second channel and a second reference signal that are comprised in the first set comprises:

determining, based on the beam information of at least one of the first channel and the first reference signal, beam information of at least one of a second channel
10 and a second reference signal that are scheduled by at least one of the first channel and the first reference signal.

97. The beam information determining method according to claim 3, further comprising:

receiving second indication information for at least one of a third channel and a
15 third reference signal that are comprised in the first set, wherein the second indication information is used to indicate one piece of candidate beam information in the candidate beam information pool; and

in a case that an application time of the candidate beam information indicated by the first indication information is a latest application time, determining beam
20 information of at least one of the first channel, the first reference signal, the third channel, and the third reference signal based on the candidate beam information indicated by the first indication information; or

in a case that an application time of the candidate beam information indicated by the second indication information is a latest application time, determining beam
25 information of at least one of the first channel, the first reference signal, the third channel, and the third reference signal based on the candidate beam information indicated by the second indication information.

~~10. The beam information determining method according to claim 3, wherein in a case that the first reference signal is a channel sounding reference signal SRS, the
30 receiving first indication information for the first reference signal comprises:~~

~~receiving first downlink control information DCI, wherein the first DCI carries the first indication information.~~

~~11. The beam information determining method according to claim 10, wherein the first DCI comprises an SRS request field, and the SRS request field carries the first indication information.~~

~~12. The beam information determining method according to claim 10, wherein in a case that the first channel is a physical uplink shared channel PUSCH, the receiving first indication information for the first channel comprises:~~

~~receiving second DCI, wherein the second DCI comprises a channel state information reference signal resource indicator CRI field or a synchronization signal block resource indicator SSBRI field, and the CRI field or the SSBRI field carries the first indication information; wherein~~

~~the CRI field or the SSBRI field is associated with a target SRS resource.~~

~~13. The beam information determining method according to claim 12, wherein in a case that the PUSCH is a codebook-based PUSCH, the second DCI does not comprise an SRI field, or a length of the SRI field is zero bits; or~~

~~in a case that the PUSCH is a non-codebook-based PUSCH, the second DCI comprises an SRI field or a length of the SRI field is greater than zero bits, and the SRI field is used for CSI measurement.~~

~~148. The beam information determining method according to claim 3, wherein the method further comprises:~~

~~updating, based on latest applicable candidate beam information indicated by indication information for any object in the first set, candidate beam information of an object comprised in the first set;~~

~~or,~~

~~updating, based on latest applicable candidate beam information indicated by indication information for a preset object in the first set, candidate beam information of an object comprised in the first set; wherein~~

~~the object is at least one of a channel and a reference signal.~~

~~15. A beam information determining method, applied to a network-side device and comprising:~~

~~configuring a candidate beam information pool of a first set, wherein the first set comprises at least one downlink channel and at least one uplink channel, or the first set comprises at least one channel and at least one reference signal; and the candidate beam information pool comprises at least one piece of candidate beam information; and~~

~~determining, based on the candidate beam information pool, beam information of at least one of a first channel and a first reference signal that are comprised in the first set.~~

~~16. The beam information determining method according to claim 15, wherein in a case that the candidate beam information pool comprises one piece of candidate beam information, the determining, based on the candidate beam information pool, beam information of at least one of a first channel and a first reference signal that are comprised in the first set comprises:~~

~~determining, based on the one piece of candidate beam information comprised in the candidate beam information pool, the beam information of at least one of the first channel and the first reference signal that are comprised in the first set.~~

~~17. The beam information determining method according to claim 15, wherein in a case that the candidate beam information pool comprises at least two pieces of candidate beam information, the determining, based on the candidate beam information pool, beam information of at least one of a first channel and a first reference signal that are comprised in the first set comprises:~~

~~sending first indication information for at least one of the first channel and the first reference signal that are comprised in the first set, wherein the first indication information is used to indicate one piece of candidate beam information in the candidate beam information pool; and~~

~~determining the beam information of at least one of the first channel and the first reference signal based on the first indication information.~~

~~18. The beam information determining method according to claim 15, wherein a source reference signal of each piece of candidate beam information comprised in the candidate beam information pool is any one of an SSB, a CSI-RS, and an SRS.~~

~~19. The beam information determining method according to claim 15, wherein the configuring a candidate beam information pool of a first set comprises:~~

~~configuring or activating a common candidate beam information pool for all objects in the first set;~~

~~or,~~

~~configuring or activating a candidate beam information pool of a first object in the first set; wherein other objects in the first set use the candidate beam information pool of the first object as a candidate beam information pool; wherein~~

~~the object is at least one of a channel and a reference signal.~~

~~20. The beam information determining method according to claim 17, further comprising:~~

~~determining, based on the beam information of at least one of the first channel and the first reference signal, beam information of at least one of a second channel and a second reference signal that are comprised in the first set.~~

~~21. The beam information determining method according to claim 20, wherein the determining, based on the beam information of at least one of the first channel and the first reference signal, beam information of at least one of a second channel and a second reference signal that are comprised in the first set comprises:~~

~~determining the beam information of at least one of the second channel and the second reference signal based on an association relationship between at least one of the first channel and the first reference signal and at least one of the second channel and the second reference signal, and based on the beam information of at least one of the first channel and the first reference signal.~~

~~22. The beam information determining method according to claim 20, wherein the determining, based on the beam information of at least one of the first channel and the first reference signal, beam information of at least one of a second channel and a second reference signal that are comprised in the first set comprises:~~

determining, based on the beam information of at least one of the first channel and the first reference signal, beam information of at least one of a second channel and a second reference signal that are scheduled by at least one of the first channel and the first reference signal.

5 23. The beam information determining method according to claim 17, further comprising:

 sending second indication information for at least one of a third channel and a third reference signal that are comprised in the first set, wherein the second indication information is used to indicate one piece of candidate beam information in
10 the candidate beam information pool; and

 in a case that an application time of the candidate beam information indicated by the first indication information is a latest application time, determining beam information of at least one of the first channel, the first reference signal, the third channel, and the third reference signal based on the candidate beam information
15 indicated by the first indication information; or

 in a case that an application time of the candidate beam information indicated by the second indication information is a latest application time, determining beam information of at least one of the first channel, the first reference signal, the third channel, and the third reference signal based on the candidate beam information
20 indicated by the second indication information.

 24. The beam information determining method according to claim 17, wherein in a case that the first reference signal is an SRS, the sending the first indication information for the first reference signal comprises:

25 sending first downlink control information DCI, wherein the first DCI carries the first indication information.

 25. The beam information determining method according to claim 24, wherein the first DCI comprises an SRS request field, and the SRS request field carries the first indication information.

~~26. The beam information determining method according to claim 24, wherein in a case that the first channel is a PUSCH, the sending the first indication information for the first channel comprises:~~

~~5 sending second DCI, wherein the second DCI comprises a CRI field or an SSBRI field, and the CRI field or the SSBRI field carries the first indication information; wherein~~

~~the CRI field or the SSBRI field is associated with a target SRS resource.~~

~~27. The beam information determining method according to claim 26, wherein in a case that the PUSCH is a codebook-based PUSCH, the second DCI does not comprise an SRI field, or a length of the SRI field is zero bits; or~~

~~10 in a case that the PUSCH is a non-codebook-based PUSCH, the second DCI comprises an SRI field or a length of the SRI field is greater than zero bits, and the SRI field is used for CSI measurement.~~

~~28. The beam information determining method according to claim 17, further comprising:~~

~~15 updating, based on latest applicable candidate beam information indicated by indication information for any object in the first set, candidate beam information of an object comprised in the first set;~~

~~or,~~

~~20 updating, based on latest applicable candidate beam information indicated by indication information for a preset object in the first set, candidate beam information of an object comprised in the first set; wherein~~

~~the object is at least one of a channel and a reference signal.~~

~~29. A beam information determining method, comprising:~~

~~25 determining beam information of at least one of a fourth channel and a fourth reference signal; and~~

~~determining, based on the beam information of at least one of the fourth channel and the fourth reference signal, beam information of at least one of a fifth channel and a fifth reference signal.~~

30. The beam information determining method according to claim 29, wherein in a case that the fifth channel is a physical uplink control channel PUCCH and the fourth channel is a physical downlink shared channel PDSCH, the determining beam information of the fifth channel based on beam information of the fourth channel comprises:

determining beam information of the PUCCH based on TCI state information corresponding to a preset code point in a TCI field comprised in third DCI, wherein the TCI field is used to indicate beam information of the PDSCH.

31. The beam information determining method according to claim 30, wherein in a case that the TCI field corresponds to two or more pieces of TCI state information, the determining beam information of the PUCCH based on TCI state information corresponding to a preset code point in a TCI field comprised in third DCI comprises:

determining, based on the two or more pieces of TCI state information, the beam information of the PUCCH pointing to two or more transmission and reception points TRPs, respectively; or

determining, based on the two or more pieces of TCI state information, the beam information of the PUCCH corresponding to two or more TRP identifiers, respectively.

32. The beam information determining method according to claim 29, wherein in a case that the fifth channel is a PUCCH and the fourth channel is a PDCCH, the determining beam information of the fifth channel based on beam information of the fourth channel comprises:

determining beam information of the PUCCH based on beam information of the PDCCH.

33. The beam information determining method according to claim 29, wherein in a case that the fifth channel is a PUCCH, if a PDCCH and a PDSCH correspond to different TRPs or TRP identifiers,

the determining beam information of the fifth channel based on beam information of the fourth channel comprises:

~~determining beam information of the PUCCH based on beam information of a higher-priority channel in the PDCCH and the PDSCH.~~

~~34. The beam information determining method according to claim 29, wherein in a case that the fifth reference signal is an SRS, the fourth channel is a PDSCH or a PUSCH.~~

~~35. A terminal, comprising:~~

~~a first determining module, configured to determine a candidate beam information pool of a first set, wherein the first set comprises at least one downlink channel and at least one uplink channel, or the first set comprises at least one channel and at least one reference signal; and the candidate beam information pool comprises at least one piece of candidate beam information; and~~

~~a second determining module, configured to determine, based on the candidate beam information pool, beam information of at least one of a first channel and a first reference signal that are comprised in the first set.~~

~~369. A terminal, comprising a memory, a processor, 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 following steps of the beam information determining method according to any one of claims 1 to 14 are implemented:-~~

~~determining a candidate beam information pool of a first set, wherein the first set comprises at least one downlink channel and at least one uplink channel, or the first set comprises at least one channel and at least one reference signal; and the candidate beam information pool comprises at least one piece of candidate beam information; and~~

~~determining, based on the candidate beam information pool, beam information of at least one of a first channel and a first reference signal that are comprised in the first set.~~

~~10. The terminal according to claim 9, wherein in a case that the candidate beam information pool comprises at least two pieces of candidate beam information, the step of determining, based on the candidate beam information pool, beam~~

information of at least one of a first channel and a first reference signal that are comprised in the first set comprises:

receiving first indication information for at least one of the first channel and the first reference signal that are comprised in the first set, wherein the first indication information is used to indicate one piece of candidate beam information in the candidate beam information pool; and

determining the beam information of at least one of the first channel and the first reference signal based on the first indication information.

11. The terminal according to claim 9, wherein the step of determining a candidate beam information pool of a first set comprises:

determining the candidate beam information pool of the first set based on a common candidate beam information pool configured or activated by a network-side device for all objects of the first set;

or,

determining the candidate beam information pool of the first set based on a candidate beam information pool configured or activated by the network-side device for a first object in the first set, wherein other objects in the first set use the candidate beam information pool of the first object as a candidate beam information pool; wherein

the object is at least one of a channel and a reference signal.

12. The terminal according to claim 10, wherein when the computer program is executed by the processor, the following steps are further implemented:

determining, based on the beam information of at least one of the first channel and the first reference signal, beam information of at least one of a second channel and a second reference signal that are scheduled by at least one of the first channel and the first reference signal.

13. The terminal according to claim 10, wherein when the computer program is executed by the processor, the following steps are further implemented:

receiving second indication information for at least one of a third channel and a third reference signal that are comprised in the first set, wherein the second

indication information is used to indicate one piece of candidate beam information in the candidate beam information pool; and

in a case that an application time of the candidate beam information indicated by the first indication information is a latest application time, determining beam information of at least one of the first channel, the first reference signal, the third channel, and the third reference signal based on the candidate beam information indicated by the first indication information; or

in a case that an application time of the candidate beam information indicated by the second indication information is a latest application time, determining beam information of at least one of the first channel, the first reference signal, the third channel, and the third reference signal based on the candidate beam information indicated by the second indication information.

14. The terminal according to claim 10, wherein when the computer program is executed by the processor, the following steps are further implemented:

updating, based on latest applicable candidate beam information indicated by indication information for any object in the first set, candidate beam information of an object comprised in the first set;

or,

updating, based on latest applicable candidate beam information indicated by indication information for a preset object in the first set, candidate beam information of an object comprised in the first set; wherein

the object is at least one of a channel and a reference signal.

~~37. A network-side device, comprising:~~

~~a configuration module, configured to configure a candidate beam information pool of a first set, wherein the first set comprises at least one downlink channel and at least one uplink channel, or the first set comprises at least one channel and at least one reference signal; and the candidate beam information pool comprises at least one piece of candidate beam information; and~~

~~a third determining module, configured to determine, based on the candidate beam information pool, beam information of at least one of a first channel and a first reference signal that are comprised in the first set.~~

1538. A network-side device, comprising a memory, a processor, 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 following steps ~~of the beam information determining method according to any one of claims 15 to 28~~ are implemented:-

configuring a candidate beam information pool of a first set, wherein the first set comprises at least one downlink channel and at least one uplink channel, or the first set comprises at least one channel and at least one reference signal; and the candidate beam information pool comprises at least one piece of candidate beam information; and

determining, based on the candidate beam information pool, beam information of at least one of a first channel and a first reference signal that are comprised in the first set.

16. The network-side device according to claim 15, wherein in a case that the candidate beam information pool comprises at least two pieces of candidate beam information, the determining, based on the candidate beam information pool, beam information of at least one of a first channel and a first reference signal that are comprised in the first set comprises:

sending first indication information for at least one of the first channel and the first reference signal that are comprised in the first set, wherein the first indication information is used to indicate one piece of candidate beam information in the candidate beam information pool; and

determining the beam information of at least one of the first channel and the first reference signal based on the first indication information.

17. The network-side device according to claim 15, wherein the configuring a candidate beam information pool of a first set comprises:

configuring or activating a common candidate beam information pool for all objects in the first set;

or,

configuring or activating a candidate beam information pool of a first object in the first set; wherein other objects in the first set use the candidate beam information pool of the first object as a candidate beam information pool; wherein the object is at least one of a channel and a reference signal.

18. The network-side device according to claim 16, wherein when the computer program is executed by the processor, the following steps are further implemented:

determining, based on the beam information of at least one of the first channel and the first reference signal, beam information of at least one of a second channel and a second reference signal that are scheduled by at least one of the first channel and the first reference signal.

19. The network-side device according to claim 16, wherein when the computer program is executed by the processor, the following steps are further implemented:

sending second indication information for at least one of a third channel and a third reference signal that are comprised in the first set, wherein the second indication information is used to indicate one piece of candidate beam information in the candidate beam information pool; and

in a case that an application time of the candidate beam information indicated by the first indication information is a latest application time, determining beam information of at least one of the first channel, the first reference signal, the third channel, and the third reference signal based on the candidate beam information indicated by the first indication information; or

in a case that an application time of the candidate beam information indicated by the second indication information is a latest application time, determining beam information of at least one of the first channel, the first reference signal, the third channel, and the third reference signal based on the candidate beam information indicated by the second indication information.

20. The network-side device according to claim 16, wherein when the computer program is executed by the processor, the following steps are further implemented:

updating, based on latest applicable candidate beam information indicated by indication information for any object in the first set, candidate beam information of an object comprised in the first set;

or,

updating, based on latest applicable candidate beam information indicated by indication information for a preset object in the first set, candidate beam information of an object comprised in the first set; wherein

the object is at least one of a channel and a reference signal.

~~39. A communications device, comprising:~~

~~a fourth determining module, configured to determine beam information of at least one of a fourth channel and a fourth reference signal; and~~

~~a fifth determining module, configured to determine, based on the beam information of at least one of the fourth channel and the fourth reference signal, beam information of at least one of a fifth channel and a fifth reference signal.~~

~~40. A communications device, comprising a memory, a processor, 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 beam information determining method according to any one of claims 29 to 34 are implemented.~~

~~41. A computer readable storage medium, storing a computer program, wherein when the computer program is executed by a processor, the steps of the beam information determining method according to any one of claims 1 to 34 are implemented.~~