

What is claimed is:

1. A method for configuring a positioning reference signal, applied to a network device, comprising:

transmitting configuration information based on a spatial quasi co-location QCL relationship between the positioning reference signal PRS and a specific downlink signal, wherein the configuration information is used to determine a resource occupied by the PRS and the specific downlink signal;

wherein the specific downlink signal comprises one or more of following signals: a channel state information reference signal CSI-RS, a physical downlink shared channel PDSCH, a physical downlink control channel PDCCH and a synchronization signal block SSB;

~~2. The method according to claim 1, wherein, characterized in that,~~

in a case that the specific downlink signal comprises the SSB and there is a spatial QCL relationship between the PRS and the SSB, the configuration information comprises: the PRS and the SSB occupy a same orthogonal frequency division multiplexing OFDM symbol; or, the PRS and the SSB occupy different OFDM symbols;

in a case that the specific downlink signal comprises the SSB and there is no spatial QCL relationship between the PRS and the SSB, the configuration information comprises: the PRS and the SSB occupy different OFDM symbols.

~~32. The method according to claim 21, wherein, in a case that the PRS and the SSB occupy the same OFDM symbol, the PRS and the SSB have a same subcarrier spacing.~~

~~43. The method according to claim 1, further comprising:~~

transmitting the PRS and the specific downlink signal based on the configuration information.

~~5. The method according to claim 1, wherein~~

~~in a case that the specific downlink signal comprises the CSI-RS and there is a spatial QCL relationship between the PRS and the CSI-RS, the configuration information comprises: the PRS and the CSI-RS occupy a same orthogonal frequency division multiplexing OFDM symbol;~~

~~in a case that the specific downlink signal comprises the CSI-RS and there is no spatial QCL relationship between the PRS and the CSI-RS, the configuration information comprises: the PRS and the CSI-RS occupy different OFDM symbols;~~

or,

~~in a case that the specific downlink signal comprises the PDSCH and there is a spatial QCL relationship between the PRS and the PDSCH, the configuration information comprises: the PRS and the PDSCH occupy a same orthogonal frequency division multiplexing OFDM symbol; or, the PRS and the PDSCH occupy different OFDM symbols;~~

~~in a case that the specific downlink signal comprises the PDSCH and there is no spatial QCL relationship between the PRS and the PDSCH, the configuration information comprises: the PRS and the PDSCH occupy different OFDM symbols;~~

or,

~~in a case that the specific downlink signal comprises the PDCCH and there is a spatial QCL relationship between the PRS and the PDCCH, the configuration information comprises: the PRS and the PDCCH occupy a same orthogonal frequency division multiplexing OFDM symbol; or, the PRS and the PDCCH occupy different OFDM symbols;~~

~~in a case that the specific downlink signal comprises the PDCCH and there is no spatial QCL relationship between the PRS and the PDCCH, the configuration information comprises: the PRS and the PDCCH occupy different OFDM symbols.~~

6. The method according to claim 5, wherein,

~~wherein, that the PRS and the CSI RS occupy the same OFDM symbol comprises:~~

~~the PRS and the CSI RS are frequency division multiplexed on different resource elements RE in the same OFDM symbol; or in a case that the PRS and the CSI RS are transmitted on a same RE in the OFDM symbol, the PRS and the CSI RS share the same RE;~~

~~wherein, that the PRS and the PDSCH occupy the same OFDM symbol comprises:~~

~~the PDSCH is rate-matched around the PRS, or in a case that the PRS and the PDSCH are transmitted on a same RE in the OFDM symbol, the PDSCH mapped to the RE is punctured by the PRS;~~

~~wherein, in a case that there is a spatial QCL relationship between the PRS and the PDSCH, that the PRS and the PDSCH occupy different OFDM symbols comprises:~~

~~the PRS and the PDSCH occupy different OFDM symbols in a same slot; or, the PRS and the PDSCH occupy OFDM symbols in different slots;~~

~~wherein, that the PRS and the PDCCH occupy the same OFDM symbol comprises:~~

~~the PDCCH is rate matched around the PRS, or in a case that the PRS and the PDCCH are transmitted on a same RE in the OFDM symbol, the PDCCH mapped to the RE is punctured by the PRS.~~

74. A method for receiving a positioning reference signal, applied to a terminal device, comprising:

receiving configuration information, wherein the configuration information is transmitted by a network device based on a spatial quasi co-location QCL relationship between the positioning reference signal PRS and a specific downlink signal, and the configuration information is used to determine a resource occupied by the PRS and the specific downlink signal;

wherein the specific downlink signal comprises one or more of following signals: a channel state information reference signal CSI-RS, a physical downlink shared channel PDSCH, a physical downlink control channel PDCCH and a synchronization signal block SSB;

~~8. The method according to claim 7, wherein, characterized in that,~~

in a case that the specific downlink signal comprises the SSB and there is a spatial QCL relationship between the PRS and the SSB, the configuration information comprises: the PRS and the SSB occupy a same orthogonal frequency division multiplexing OFDM symbol; or, the PRS and the SSB occupy different OFDM symbols;

in a case that the specific downlink signal comprises the SSB and there is no spatial QCL relationship between the PRS and the SSB, the configuration information comprises: the PRS and the SSB occupy different OFDM symbols.

95. The method according to claim 84, wherein, in a case that the PRS and the SSB occupy the same OFDM symbol, the PRS and the SSB have a same subcarrier spacing.

106. The method according to claim 84, wherein, in a case that there is no spatial QCL relationship between the PRS and the SSB, a terminal only receives the SSB.

~~11. The method according to claim 7, wherein,~~

~~in a case that the specific downlink signal comprises the CSI-RS and there is a spatial QCL relationship between the PRS and the CSI-RS, the configuration information comprises: the PRS and the CSI-RS occupy a same orthogonal frequency division multiplexing OFDM symbol;~~

~~in a case that the specific downlink signal comprises the CSI-RS and there is no spatial QCL relationship between the PRS and the CSI-RS, the configuration information comprises: the PRS and the CSI-RS occupy different OFDM symbols;~~

~~or,~~

~~in a case that the specific downlink signal comprises the PDSCH and there is a spatial QCL relationship between the PRS and the PDSCH, the configuration information comprises: the PRS and the PDSCH occupy a same orthogonal frequency division multiplexing OFDM symbol; or, the PRS and the PDSCH occupy different OFDM symbols;~~

~~in a case that the specific downlink signal comprises the PDSCH and there is no spatial QCL relationship between the PRS and the PDSCH, the configuration information comprises: the PRS and the PDSCH occupy different OFDM symbols;~~

~~or,~~

~~in a case that the specific downlink signal comprises the PDCCH and there is a spatial QCL relationship between the PRS and the PDCCH, the configuration information comprises: the PRS and the PDCCH occupy a same orthogonal frequency division multiplexing OFDM symbol; or, the PRS and the PDCCH occupy different OFDM symbols;~~

~~in a case that the specific downlink signal comprises the PDCCH and there is no spatial QCL relationship between the PRS and the PDCCH, the configuration information comprises: the PRS and the PDCCH occupy different OFDM symbols.~~

~~12. The method according to claim 11, wherein,~~

~~wherein, that the PRS and the CSI-RS occupy the same OFDM symbol comprises:~~

~~the PRS and the CSI-RS are frequency division multiplexed on different resource elements RE in the same OFDM symbol; or in a case that the PRS and the CSI-RS are transmitted on a same RE in the OFDM symbol, the PRS and the CSI-RS share the same RE;~~

~~wherein, that the PRS and the PDSCH occupy the same OFDM symbol comprises:~~

~~the PDSCH is rate-matched around the PRS, or in a case that the PRS and the PDSCH are transmitted on a same RE in the OFDM symbol, the PDSCH mapped to the RE is punctured by the PRS;~~

~~wherein, in a case that there is a spatial QCL relationship between the PRS and the PDSCH, that the PRS and the PDSCH occupy different OFDM symbols comprises:~~

~~the PRS and the PDSCH occupy different OFDM symbols in a same slot; or, the PRS and the PDSCH occupy OFDM symbols in different slots;~~

~~wherein, that the PRS and the PDCCH occupy the same OFDM symbol comprises:~~

~~the PDCCH is rate matched around the PRS, or in a case that the PRS and the PDCCH are transmitted on a same RE in the OFDM symbol, the PDCCH mapped to the RE is punctured by the PRS.~~

137. The method according to claim 74, wherein,

the configuration information is received by one or more of following means:

higher layer signaling;

MAC layer signaling; or

downlink control information DCI;

wherein the method further comprises: receiving the PRS and the specific downlink signal based on the configuration information.

148. A network device, comprising:

a first transmission module, configured to transmit configuration information based on a spatial quasi co-location QCL relationship between a positioning reference signal PRS and a specific downlink signal, wherein the configuration information is used to determine a resource occupied by the PRS and the specific downlink signal;

wherein the specific downlink signal comprises one or more of following signals: a channel state information reference signal CSI-RS, a physical downlink shared channel PDSCH, a physical downlink control channel PDCCH and a synchronization signal block SSB;

characterized in that,

in a case that the specific downlink signal comprises the SSB and there is a spatial QCL relationship between the PRS and the SSB, the configuration information comprises: the PRS and the SSB occupy a same orthogonal frequency division multiplexing OFDM symbol; or, the PRS and the SSB occupy different OFDM symbols;

in a case that the specific downlink signal comprises the SSB and there is no spatial QCL relationship between the PRS and the SSB, the configuration information comprises: the PRS and the SSB occupy different OFDM symbols.

159. A terminal device, comprising:

a first reception module, configured to receive configuration information, wherein the configuration information is transmitted by a network device based on a spatial quasi co-location QCL relationship between a positioning reference signal PRS and a specific downlink signal, and the configuration information is used to determine a resource occupied by the PRS and the specific downlink signal;

wherein the specific downlink signal comprises one or more of following signals: a channel state information reference signal CSI-RS, a physical downlink shared channel PDSCH, a physical downlink control channel PDCCH and a synchronization signal block SSB;

characterized in that,

in a case that the specific downlink signal comprises the SSB and there is a spatial QCL relationship between the PRS and the SSB, the configuration information comprises: the PRS and the SSB occupy a same orthogonal frequency division multiplexing OFDM symbol; or, the PRS and the SSB occupy different OFDM symbols;

in a case that the specific downlink signal comprises the SSB and there is no spatial QCL relationship between the PRS and the SSB, the configuration information comprises: the PRS and the SSB occupy different OFDM symbols.