

CLAIMS

What is claimed is:

1. ———— A method for wireless communication by a user equipment (UE), comprising:
 - _receiving signaling indicating a transmission configuration indication (TCI) state corresponding to an initial control resource set (coreset);
 - _identifying a quasi co-location (QCL) assumption associated with a synchronization signal block (SSB) selected in a random-access procedure;
 - , wherein the SSB is selected through the random-access procedure not initiated by a physical downlink control channel (PDCCH) order that triggers a non-contention based random-access procedure; determining spatial parameters for monitoring the initial coreset for control information using the indicated TCI state or the identified QCL assumption based at least in part on whether a first time at which the indicated TCI state is to be applied is more recent than a second time at which the identified QCL assumption is to be applied; and monitoring the initial coreset based at least in part on the determined spatial parameters.
 - ~~monitoring the coreset based at least in part on the determined spatial parameters.~~

2. ———— The method of claim 1, wherein the TCI state indicates a configuration of first and second reference signals that have a QCL relationship and a QCL type associated with the SSB.

3. ———— The method of claim 1, wherein receiving the signaling further comprises:
 - _identifying that an SSB index of the SSB corresponds to a first control channel monitoring occasion of a plurality of control channel monitoring occasions; and
 - _monitoring a common search space of the first control channel monitoring occasion for the control information.

4. ———— The method of claim 1, wherein the SSB has a QCL relationship with a reference signal of the indicated TCI state.

5. ———— ~~The method of claim 1, wherein the SSB is selected through the random-access procedure not triggered by a physical downlink control channel (PDCCH) order that triggers a non-contention based random-access procedure.~~

6. ———— The method of claim 1, further comprising:
 - _transmitting a capability indicator that indicates a defined number of active TCI states; and

receiving configuration signaling indicating a defined number of QCL assumptions for at least one physical downlink shared channel (PDSCH) and at least one coreset for a bandwidth part based at least in part on transmitting the capability indicator.

7. — 6. The method of claim 65, wherein the defined number of QCL assumptions active for the UE is less than or equal to the defined number of active TCI states.

8. — 7. The method of claim 1, wherein determining the spatial parameters further comprises:

determining that the identified QCL assumption is ready to be applied a defined number of transmission time intervals after receiving a response from a base station in the random-access procedure.

9. — 8. The method of claim 1, wherein the TCI state corresponding to the initial coreset is one of a set of TCI states configured in a physical downlink shared channel (PDSCH) configuration information element.

10. — 9. A method for wireless communication by a base station, comprising:

transmitting signaling indicating a transmission configuration indication (TCI) state corresponding to an initial control resource set (coreset);

identifying a quasi co-location (QCL) assumption associated with a synchronization signal block (SSB) selected in a random-access procedure;

, wherein the SSB is selected through the random-access procedure not initiated by a physical downlink control channel (PDCCH) order that triggers a non-contention based random-access procedure; determining spatial parameters for the initial coreset for control information using the indicated TCI state or the identified QCL assumption based at least in part on whether a first time at which the indicated TCI state is to be applied is more recent than a second time at which the identified QCL assumption is to be applied; and transmitting the control information via the initial coreset based at least in part on the determined spatial parameters.

~~transmitting control information via the coreset based at least in part on the determined spatial parameters.~~

11. — 10. The method of claim 109, wherein the TCI state indicates a configuration of first and second reference signals that have a QCL relationship and a QCL type associated with the SSB.

~~12.~~—~~11.~~ The method of claim ~~109~~, wherein transmitting the control information comprises:

~~_transmitting the control information in a first control channel monitoring occasion of a plurality of control channel monitoring occasions, wherein a location of the first control channel monitoring occasion within a common search space of a control channel corresponding to the initial coreset is based at least in part on an SSB index of the SSB.~~

~~13.~~—~~12.~~ The method of claim ~~109~~, wherein the SSB has a QCL relationship with a reference signal of the indicated TCI state.

~~14.~~—~~13.~~ The method of claim ~~109~~, further comprising:

~~_receiving a capability indicator that indicates a defined number of active TCI states; and~~

~~_transmitting configuration signaling indicating a defined number of QCL assumptions for at least one physical downlink shared channel and at least one coreset for a bandwidth part based at least in part on receiving the capability indicator.~~

~~15.~~—~~14.~~ The method of claim ~~1413~~, wherein the defined number of QCL assumptions active for ~~the a user equipment (UE)~~ is less than or equal to the defined number of active TCI states.

~~16.~~—~~15.~~ The method of claim ~~109~~, wherein the TCI state corresponding to the initial coreset is one of a set of TCI states configured in a physical downlink shared channel (PDSCH) configuration information element.

~~17.~~—~~16.~~ An apparatus for wireless communication by a user equipment (UE), comprising:

~~_____ means for receiving a processor, memory in electronic communication with the processor; and instructions stored in the memory and executable by the processor to cause the apparatus to: receive~~ signaling indicating a transmission configuration indication (TCI) state corresponding to an initial control resource set (coreset);

~~_____ means for identifying~~ identify a quasi co-location (QCL) assumption associated with a synchronization signal block (SSB) selected in a random-access procedure;

~~_____ means for determining, wherein the SSB is selected through the random-access procedure not initiated by a physical downlink control channel (PDCCH) order that triggers a non-contention based random-access procedure; determine~~ spatial parameters for monitoring the initial coreset for control information using the indicated TCI state or the identified QCL assumption based at least in part on whether a first time at which the indicated TCI state is to

~~be applied is more recent than a second time at which the identified QCL assumption is to be applied; and monitor the initial coreset based at least in part on the determined spatial parameters.~~

~~_____ means for monitoring the coreset based at least in part on the determined spatial parameters.~~

18.—~~17.~~ The apparatus of claim ~~17~~16, wherein the TCI state indicates a configuration of first and second reference signals that have a QCL relationship and a QCL type associated with the SSB.

19.—~~18.~~ The apparatus of claim ~~17~~16, wherein the ~~means for receiving instructions to receive the signaling comprises:~~

~~_____ means for identifying~~ further are executable by the processor to cause the apparatus to: identify that an SSB index of the SSB corresponds to a first control channel monitoring occasion of a plurality of control channel monitoring occasions; and ~~means for monitoring~~ monitor a common search space of the first control channel monitoring occasion for the control information.

20.—~~19.~~ The apparatus of claim ~~17~~16, wherein the SSB has a QCL relationship with a reference signal of the indicated TCI state.

21.—~~20.~~ The apparatus of claim ~~17~~16, wherein the ~~SSB is selected through the random-access procedure not triggered~~ instructions are further executable by a physical downlink control channel (PDCCH) order that triggers a non-contention based random access procedure.

22.—~~The~~ the processor to cause the apparatus of claim ~~17~~, further comprising:

~~_____ means for transmitting~~ to: transmit a capability indicator that indicates a defined number of active TCI states; and

~~_____ means for receiving~~ receive configuration signaling indicating a defined number of QCL assumptions for at least one physical downlink shared channel (PDSCH) and at least one coreset for a bandwidth part based at least in part on transmitting the capability indicator.

23.—~~21.~~ The apparatus of claim ~~22~~20, wherein the defined number of QCL assumptions active for the UE is less than or equal to the defined number of active TCI states.

24.—~~22.~~ The apparatus of claim ~~17~~16, wherein the ~~means for determining instructions to determine the spatial parameters comprises:~~

~~means for determining~~ further are executable by the processor to cause the apparatus to: determine that the identified QCL assumption is ready to be applied a defined number of transmission time intervals after receiving a response from a base station in the random-access procedure.

25.—~~23.~~ The apparatus of claim ~~17~~16, wherein the TCI state corresponding to the initial coreset is one of a set of TCI states configured in a physical downlink shared channel (PDSCH) configuration information element.

26.—~~24.~~ An apparatus for wireless communication by a base station, comprising:

~~means for transmitting~~ a processor, memory in electronic communication with the processor; and instructions stored in the memory and executable by the processor to cause the apparatus to: transmit signaling indicating a transmission configuration indication (TCI) state corresponding to an initial control resource set (coreset);

~~means for identifying~~ identify a quasi co-location (QCL) assumption associated with a synchronization signal block (SSB) selected in a random-access procedure; ~~means for determining,~~ wherein the SSB is selected through the random-access procedure not initiated by a physical downlink control channel (PDCCH) order that triggers a non-contention based random-access procedure; determine spatial parameters for the initial coreset for control information using the indicated TCI state or the identified QCL assumption based at least in part on whether a first time at which the indicated TCI state is to be applied is more recent than a second time at which the identified QCL assumption is to be applied; and, and transmit the control information via the initial coreset based at least in part on the determined spatial parameters.

~~means for transmitting control information via the coreset based at least in part on the determined spatial parameters.~~

27.—~~25.~~ The apparatus of claim ~~26~~24, wherein the TCI state indicates a configuration of first and second reference signals that have a QCL relationship and a QCL type associated with the SSB.

~~28.~~ ~~26.~~ The apparatus of claim ~~26~~24, wherein the ~~means for transmitting instructions to transmit the control information further are executable by the processor to cause the control information comprises:~~

~~means for transmitting~~ apparatus to: transmit the control information in a first control channel monitoring occasion of a plurality of control channel monitoring occasions, wherein a location of the first control channel monitoring occasion within a common search space of a control channel corresponding to the initial coreset is based at least in part on an SSB index of the SSB.

~~29.~~ ~~27.~~ The apparatus of claim ~~26~~24, wherein the SSB has a QCL relationship with a reference signal of the indicated TCI state.

~~30.~~ ~~28.~~ The apparatus of claim ~~26~~24, wherein the instructions are further comprising:

~~means for receiving~~ executable by the processor to cause the apparatus to:
receive a capability indicator that indicates a defined number of active TCI states; and

~~means for transmitting~~ transmit configuration signaling indicating a defined number of QCL assumptions for at least one physical downlink shared channel (PDSCH) and at least one coreset for a bandwidth part based at least in part on receiving the capability indicator.