

CLAIMS

What is claimed is:

1. _____ A method for wireless communication at a user equipment (UE), comprising:

_____ receiving, from a base station, configuration information for a control channel search space set in a first transmission time interval (TTI), the received configuration information comprising an indication of an absence of a physical downlink control channel (PDCCH) transmission in the control channel search space set, and a set of time and frequency resources for the control channel search space set;

_____ identifying time and frequency resources allocated for a physical downlink shared channel (PDSCH) in a second TTI based at least in part on the set of time and frequency resources for the control channel search space set in the first TTI and the indication of the absence of a PDCCH transmission in the control channel search space set; ~~and~~

~~receiving a PDSCH transmission in the second TTI using the identified time and frequency resources.~~

2. _____ The method of claim 1, further comprising:

~~refraining from performing blind decoding in the control channel search space set based at least in part on receiving the indication of the absence of the PDCCH transmission.~~

3. _____ ~~The method of claim 1, wherein the configuration information for the control channel search space set is received in radio resource control signaling.~~

4. _____ ~~The method of claim 1, wherein the configuration information comprises a control resource set configuration from the base station, a transmission configuration indication (TCI) state, and the time and frequency resources corresponding to resources of the control resource set configuration.~~

5. _____ ~~The method of claim 1, further comprising:~~

~~receiving, in a field of a downlink control information (DCI), a transmission configuration indication (TCI) state, wherein the TCI state comprises a spatial quasi-collocation (QCL) parameter for a beam indication.~~

6. ~~— The method of claim 1, further comprising:~~

~~receiving, in a field of a downlink control information (DCI), a transmission configuration indication (TCI) state; and~~

~~receiving, based at least in part on a scheduling offset of the PDSCH transmission being greater than or equal to a threshold value, the PDSCH transmission in the identified time and frequency resources using a beam associated with the received TCI state.~~

7. ~~— The method of claim 1, further comprising:~~

~~receiving, in a field of a downlink control information (DCI), a first transmission configuration indication (TCI) state; and~~

~~receiving, based at least in part on a scheduling offset of the PDSCH transmission indicated by the DCI being less than or equal to a threshold value, the PDSCH transmission in the second TTI using the identified time and frequency resources using a first beam associated with a second TCI state, the first beam different from a second beam associated with the first TCI state, and the second TCI state of a control resource set associated with the control channel search space set.~~

8. ~~— 2. The method of claim 1, wherein further comprising: refraining from performing blind decoding in the control channel search space set associated with a control resource set comprises a zero number of PDCCH candidates.~~

9. ~~— A method for wireless communication at a base station, comprising:~~

~~identifying time and frequency resources for a physical downlink shared channel (PDSCH) to be transmitted to a user equipment (UE) in a first transmission time interval (TTI);~~

~~transmitting, to based at least in part on receiving the UE, indication of the absence of the PDCCH transmission.~~

3. The method of claim 1, wherein the configuration information for a control channel search space set in a second TTI, the second TTI preceding the first TTI, and the configuration information comprising an indication of an absence of a physical downlink control channel (PDCCH) transmission to be sent in the control channel search space set to indicate the

identified time and frequency resources for the PDSCH, and a set of time and frequency resources for the control channel search space set; and

transmitting a PDSCH transmission in the first TTI using the identified time and frequency resources for the PDSCH.

10. ~~—~~ The method of claim 9, further comprising:

transmitting the configuration information for the control channel search space set ~~using~~ is received in radio resource control signaling.

11. ~~—~~ 4. The method of claim 9~~1~~, wherein the configuration information comprises a control resource set configuration, ~~a~~ from the base station, one or more transmission configuration indication (TCI) ~~states~~states, and the time and frequency resources corresponding to resources of the control resource set configuration.

12. ~~—~~ 5. The method of claim 9, ~~further comprising:~~

transmitting, in a field of a downlink control information (DCI), a ~~transmission configuration indication (TCI) state~~1, wherein the first TCI state and the second TCI state ~~comprises a~~comprise one or more spatial quasi-collocation (QCL) ~~parameter~~parameters for a beam indication.

13. ~~—~~ 6. The method of claim 9~~1~~, further comprising:

transmitting, in a field of a downlink control information (DCI), a ~~transmission configuration indication (TCI) state; and~~

~~transmitting~~ receiving, based at least in part on ~~a~~the scheduling offset of the PDSCH transmission indicated by the DCI being greater than or equal to ~~a~~the threshold value, the PDSCH transmission in the identified time and frequency resources using a beam associated with the ~~transmitted~~ received first TCI state.

14. ~~—~~ 7. The method of claim 9, ~~further comprising:~~

transmitting, in a field of a downlink control information (DCI), a first ~~transmission configuration indication (TCI) state; and~~

~~transmitting, based at least in part on a scheduling offset of the PDSCH transmission being less than or equal to a threshold value, the PDSCH transmission in the identified time and frequency resources using a first beam associated with a second TCI state, the first beam different from a second beam associated with the first TCI state, and the second TCI state of a control resource set associated with the control channel search space set.~~

15. ~~The method of claim 9~~1, wherein the control channel search space set associated with ~~at~~the control resource set comprises a zero number of PDCCH candidates.

16. ~~8.~~ An apparatus for wireless communication, comprising:

_means for receiving, from a base station, configuration information for a control channel search space set in a first transmission time interval (TTI), the received configuration information comprising an indication of an absence of a physical downlink control channel (PDCCH) transmission in the control channel search space set, and a set of time and frequency resources for the control channel search space set;

_means for identifying time and frequency resources allocated for a physical downlink shared channel (PDSCH) in a second TTI based at least in part on the set of time and frequency resources for the control channel search space set in the first TTI and the indication of the absence of a PDCCH transmission in the control channel search space set; ~~and~~

means for receiving, in a field of a downlink control information (DCI), a first transmission configuration indication (TCI) state; and means for receiving, based at least in part on a scheduling offset of a PDSCH transmission indicated by the DCI being less than or equal to a threshold value, the PDSCH transmission in the second TTI using the identified time and frequency resources; using a first beam associated with a second TCI state, the first beam different from a second beam associated with the first TCI state, and the second TCI state of a control resource set associated with the control channel search space set.

17. ~~9.~~ The apparatus of claim ~~16~~8, further comprising:

means for refraining from performing blind decoding in the control channel search space set based at least in part on receiving the indication of the absence of the PDCCH transmission.

~~18.~~—10. The apparatus of claim 16, ~~further comprising:~~

~~means for receiving, in a field of a downlink control information (DCI), a transmission configuration indication (TCI) state~~8, wherein the first TCI state and the second TCI state ~~comprises a~~comprise one or more spatial quasi-collocation (QCL) ~~parameter~~parameters for a beam indication.

~~19.~~—11. The apparatus of claim ~~16~~8, further comprising:

~~means for receiving, in a field of a downlink control information (DCI), a transmission configuration indication (TCI) state; and~~

means for receiving, based at least in part on a~~the~~ scheduling offset of the PDSCH transmission indicated by the DCI being greater than or equal to a~~the~~ threshold value, the PDSCH transmission in the identified time and frequency resources using a beam associated with the received first TCI state.

~~20.~~—The apparatus of claim 16, further comprising:

~~means for receiving, in a field of a downlink control information (DCI), a first transmission configuration indication (TCI) state; and~~

~~means for receiving, based at least in part on a scheduling offset of the PDSCH transmission being less than or equal to a threshold value, the PDSCH transmission in the identified time and frequency resources using a first beam associated with a second TCI state, the first beam different from a second beam associated with the first TCI state, and the second TCI state of a control resource set associated with the control channel search space set.~~

~~21.~~—12. An apparatus for wireless communication, comprising:

~~means for identifying time and frequency resources for a physical downlink shared channel (PDSCH) to be transmitted to a user equipment (UE) in a first transmission time interval (TTI);~~

~~means for transmitting, to the UE, configuration information for a control channel search space set in a second TTI, the second TTI preceding the first TTI, and the configuration information comprising an indication of an absence of a physical downlink control channel (PDCCH) transmission to be sent in the control channel search space set to indicate the identified time and frequency resources for the PDSCH, and a set of time and frequency resources for the control channel search space set; and~~

~~means for transmitting a PDSCH transmission in the first TTI using the identified time and frequency resources for the PDSCH.~~

22.—The apparatus of claim 21, further comprising:

~~means for transmitting the configuration information for the control channel search space set using radio resource control signaling.~~

23.—The apparatus of claim 21, further comprising:

~~means for transmitting, in a field of a downlink control information (DCI), a transmission configuration indication (TCI) state, wherein the TCI state comprises a spatial quasi-collocation (QCL) parameter for a beam indication.~~

24.—The apparatus of claim 21, further comprising:

~~means for transmitting the PDSCH transmission in the first TTI using a beam corresponding to the identified frequency resources based at least in part on a scheduling offset of the PDSCH transmission being greater than or equal to a threshold value.~~

25.—The apparatus of claim 21, further comprising:

~~means for transmitting the PDSCH transmission in the first TTI using a first beam based at least in part on a scheduling offset of the PDSCH transmission being less than or equal to a threshold value, the first beam different from a second beam corresponding to the identified time and frequency resources.~~

26.—An apparatus for wireless communication, comprising:

_____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, from a base station, configuration information for a control channel search space set in a first transmission time interval (TTI), the received configuration information comprising an indication of an absence of a physical downlink control channel (PDCCH) transmission in the control channel search space set, and a set of time and frequency resources for the control channel search space set;

_____identify time and frequency resources allocated for a physical downlink shared channel (PDSCH) in a second TTI based at least in part on the set of time and frequency resources for the control channel search space set in the first TTI and the indication of the absence of a PDCCH transmission in the control channel search space set; ~~and~~

receive, in a field of a downlink control information (DCI), a first transmission configuration indication (TCI) state; and receive, based at least in part on a scheduling offset of a PDSCH transmission indicated by the DCI being less than or equal to a threshold value, the PDSCH transmission in the second TTI using the identified time and frequency resources; using a first beam associated with a second TCI state, the first beam different from a second beam associated with the first TCI state, and the second TCI state of a control resource set associated with the control channel search space set.

27.—~~13.~~ The apparatus of claim ~~26~~12, wherein the instructions are further executable by the processor to cause the apparatus to:

_____refrain from performing blind decoding in the control channel search space set based at least in part on receiving the indication of the absence of the PDCCH transmission.

28.—~~14.~~ The apparatus of claim ~~26~~12, wherein the configuration information for the control channel search space set is received in radio resource control signaling.

~~29.~~—15. The apparatus of claim ~~26~~12, wherein the configuration information comprises a control resource set configuration from the base station, ~~a~~one or more transmission configuration indication (TCI) ~~state~~states, and the time and frequency resources corresponding to resources of the control resource set configuration.

~~30.~~—16. The apparatus of claim ~~26~~12, wherein the first TCI state and the second TCI state comprise one or more spatial quasi-collocation (QCL) parameters for beam indication.

17. The apparatus of claim 12, wherein the instructions are further executable by the processor to cause the apparatus to:

~~receive, in a field of a downlink control information (DCI), a transmission configuration indication (TCI) state, wherein the TCI state comprises a spatial quasi-collocation (QCL) parameter for a beam indication.~~

~~31.~~—The apparatus of claim ~~26~~, wherein the instructions are further executable by the processor to cause the apparatus to:

~~receive, in a field of a downlink control information (DCI), a transmission configuration indication (TCI) state; and~~

~~receive, based at least in part on a~~the scheduling offset of the PDSCH transmission indicated by the DCI being greater than or equal to a~~the~~ threshold value, the PDSCH transmission in the identified time and frequency resources using a beam associated with the received first TCI state.

~~32.~~—18. The apparatus of claim ~~26~~12, wherein the ~~instructions are further executable by the processor to cause the apparatus to:~~

~~receive, in a field of a downlink control information (DCI), a first transmission configuration indication (TCI) state; and~~

~~receive, based at least in part on a scheduling offset of the PDSCH transmission being less than or equal to a threshold value, the PDSCH transmission in the identified time and frequency resources using a first beam associated with a second TCI state, the first beam different from a second beam associated with the first TCI state, and the~~

~~second TCI state of a control resource set~~control channel search space set associated with the ~~control channel search space set.~~

33.—~~The apparatus of claim 26, wherein the control channel search space set associated with a control resource set comprises a zero number of PDCCH candidates.~~

34.—~~An apparatus for wireless communication, comprising:~~
~~_____ 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:~~

~~identify time and frequency resources for a physical downlink shared channel (PDSCH) to be transmitted to a user equipment (UE) in a first transmission time interval (TTI);~~

~~transmit, to the UE, configuration information for a control channel search space set in a second TTI, the second TTI preceding the first TTI, and the configuration information comprising an indication of an absence of a physical downlink control channel (PDCCH) transmission to be sent in the control channel search space set to indicate the identified time and frequency resources for the PDSCH, and a set of time and frequency resources for the control channel search space set; and~~

~~transmit a PDSCH transmission in the first TTI using the identified time and frequency resources for the PDSCH.~~

35.—~~The apparatus of claim 34, wherein the instructions are further executable by the processor to cause the apparatus to:~~

~~transmit the configuration information for the control channel search space set using radio resource control signaling.~~

36.—~~The apparatus of claim 34, wherein the configuration information comprises a control resource set configuration, a transmission configuration indication (TCI) state, and the time and frequency resources corresponding to resources of the control resource set configuration.~~

37.—The apparatus of claim 34, wherein the instructions are further executable by the processor to cause the apparatus to:

~~transmit, in a field of a downlink control information (DCI), a transmission configuration indication (TCI) state, wherein the TCI state comprises a spatial quasi-collocation (QCL) parameter for a beam indication.~~

38.—The apparatus of claim 34, wherein the instructions are further executable by the processor to cause the apparatus to:

~~transmit, in a field of a downlink control information (DCI), a transmission configuration indication (TCI) state; and~~

~~transmit, based at least in part on a scheduling offset of the PDSCH transmission being greater than or equal to a threshold value, the PDSCH transmission in the identified time and frequency resources using a beam associated with the transmitted TCI state.~~

39.—The apparatus of claim 34, wherein the instructions are further executable by the processor to cause the apparatus to:

~~transmit, in a field of a downlink control information (DCI), a first transmission configuration indication (TCI) state; and~~

~~transmit, based at least in part on a scheduling offset of the PDSCH transmission being less than or equal to a threshold value, the PDSCH transmission in the identified time and frequency resources using a first beam associated with a second TCI state, the first beam different from a second beam associated with the first TCI state, and the second TCI state of a control resource set associated with the control channel search space set.~~

40.—The apparatus of claim 34, wherein the control channel search space set associated with a control resource set comprises a zero number of PDCCH candidates.

41.—19. A non-transitory computer-readable medium storing code for wireless communication, the code comprising instructions executable by a processor to:

_receive, from a base station, configuration information for a control channel search space set in a first transmission time interval (TTI), the received configuration information comprising an indication of an absence of a physical downlink control channel (PDCCH) transmission in the control channel search space set, and a set of time and frequency resources for the control channel search space set;

_identify time and frequency resources allocated for a physical downlink shared channel (PDSCH) in a second TTI based at least in part on the set of time and frequency resources for the control channel search space set in the first TTI and the indication of the absence of a PDCCH transmission in the control channel search space set; and

_receive a, in a field of a downlink control information (DCI), a first transmission configuration indication (TCI) state; and receive, based at least in part on a scheduling offset of a PDSCH transmission indicated by the DCI being less than or equal to a threshold value, the PDSCH transmission in the second TTI using the identified time and frequency resources;

42. — ~~A non-transitory computer-readable medium storing code for wireless communication, the code comprising instructions executable by a processor to:~~

~~identify time and frequency resources for a physical downlink shared channel (PDSCH) to be transmitted to a user equipment (UE) in a first transmission time interval (TTI);~~

~~transmit, to the UE, configuration information for a control channel search space set in using a first beam associated with a second TTI TCI state, the first beam different from a second TTI preceding beam associated with the first TTI TCI state, and the configuration information comprising an indication of an absence of a physical downlink second TCI state of a control channel (PDCCH) transmission to be sent in resource set associated with the control channel search space set to indicate the identified time and frequency resources for the PDSCH, and a set of time and frequency resources for the control channel search space set; and~~

~~transmit a PDSCH transmission in the first TTI using the identified time and frequency resources for the PDSCH.~~