~~WHAT IS CLAIMED IS:~~

CLAIMS

1. A method of wireless communication performed by a user equipment (UE), comprising:

determining that a physical uplink shared channel (PUSCH) communication, scheduled by an uplink grant, and a physical uplink control channel (PUCCH) communication, corresponding to a physical downlink shared channel (PDSCH) communication scheduled by a downlink grant, are scheduled to overlap in one or more symbols;

determining a threshold time based at least in part on an earliest scheduled starting time of the PUSCH communication or the PUCCH communication;

selectively multiplexing the PUSCH communication and the PUCCH communication based at least in part on whether the uplink grant, the downlink grant, and the PDSCH communication are received before the threshold time~~; and~~

, wherein the UE does not multiplex the PUSCH communication and the PUCCH communication if at least one of the uplink grant, the downlink grant, or a last symbol of the PDSCH communication is received after the threshold time; and transmitting the PUSCH communication, the PUCCH communication, or both the PUSCH communication and the PUCCH communication based at least in part on the selective multiplexing.

2. The method of claim 1, wherein the PUSCH communication and the PUCCH communication are multiplexed by piggybacking uplink control information (UCI) of the PUCCH communication in the PUSCH communication by puncturing the PUSCH communication or by rate-matching the PUSCH communication around the UCI.

3. The method of claim 1, wherein the PUSCH communication and the PUCCH communication are scheduled to start in different symbols, and wherein the earliest scheduled starting time is determined based at least in part on whichever of the PUSCH communication or the PUCCH communication is scheduled to start in an earlier symbol.

4. The method of claim 1, wherein the PUSCH communication and the PUCCH communication are included in a same PUCCH group.

5. The method of claim 1, wherein the UE is configured to multiplex the PUSCH communication and the PUCCH communication based at least in part on a determination that the uplink grant, the downlink grant, and a last symbol of the PDSCH communication are received before the threshold time.

~~6. The method of claim 1, wherein the UE is configured to prevent multiplexing of the PUSCH communication and the PUCCH communication based at least in part on a determination that at least one of the uplink grant, the downlink grant, or a last symbol of the PDSCH communication is received after the threshold time.~~

~~7~~6. The method of claim 1, wherein the UE is configured to drop both the PUSCH communication and the PUCCH communication based at least in part on a determination that at least one of the uplink grant, the downlink grant, or a last symbol of the PDSCH communication is received after the threshold time.

7. The method of claim 1, wherein the UE is configured to transmit one of and drop the other of the following based at least in part on a determination that at least one of the uplink grant, the downlink grant, or a last symbol of the PDSCH communication is received after the threshold time: the PUCCH communication, or the PUSCH communication.

8. The method of claim 1, wherein the UE is configured to transmit one of and drop the other of the following based at least in part on a determination that at least one of the uplink grant, the downlink grant, or a last symbol of the PDSCH communication is received after the threshold time:

~~the PUCCH communication, or~~

~~the PUSCH communication.~~

~~9. The method of claim 1, wherein the UE is configured to transmit one of and drop the other of the following based at least in part on a determination that at least one of the uplink grant, the downlink grant, or a last symbol of the PDSCH communication is received after the threshold time:~~

whichever one of the PUCCH communication or the PUSCH communication that is scheduled to start in an earlier symbol, or

whichever one of the PUCCH communication or the PUSCH communication that is scheduled to start in a later symbol.

~~10~~9. The method of claim 1, wherein the threshold time is determined based at least in part on a PUSCH processing time and a scheduled starting time of the PUSCH communication when the PUSCH communication is scheduled to start in an earlier symbol than the PUCCH communication.

~~11~~10. The method of claim 1, wherein the threshold time is determined based at least in part on a PUCCH processing time, a duration of the PDSCH communication or a preconfigured value, and a scheduled starting time of the PUCCH communication when the PUCCH communication is scheduled to start in an earlier symbol than the PUSCH communication.

~~12~~11. The method of claim 1, wherein the threshold time is a number of symbols before an initial symbol of whichever one of the PUSCH communication or the PUCCH communication that starts in an earlier symbol.

~~13~~12. The method of claim ~~12~~11, wherein the number corresponds to a maximum value of a first threshold time determined based at least in part on a PUSCH processing time and a second threshold time determined based at least in part on a PUCCH processing time.

~~14~~13. The method of claim 1, wherein the threshold time is determined based at least in part on a PUSCH processing time or a PUCCH processing time.

~~15~~14. The method of claim 1, wherein the PUCCH communication is a first PUCCH communication that is multiplexed with the PUSCH communication based at least in part on a determination that the uplink grant, the downlink grant, and the PDSCH communication, corresponding to the first PUCCH communication, are received before the threshold time, and wherein a second PUCCH communication is scheduled to overlap one or more symbols of the PUSCH communication.

~~16~~15. The method of claim ~~15~~14, wherein the UE is configured to multiplex a negative acknowledgement (NACK) corresponding to the second PUCCH communication with the PUSCH communication and the first PUCCH communication based at least in part on a determination that a downlink grant, that schedules the second PUCCH communication, is received before the threshold time and a last symbol of a PDSCH communication, corresponding to the second PUCCH communication, is received after the threshold time.

~~17~~16. The method of claim ~~16~~15, wherein the UE is configured via a downlink assignment index (DAI), indicated in the downlink grant that schedules the second PUCCH communication, for acknowledgement or negative acknowledgement (ACK/NACK) feedback.

~~18~~17. The method of claim ~~15~~14, wherein the UE is configured to drop the second PUCCH communication based at least in part on a determination that a downlink grant, that schedules the second PUCCH communication, is received before the threshold time and a last symbol of

a PDSCH communication, corresponding to the second PUCCH communication, is received after the threshold time.

~~19~~18. The method of claim ~~18~~17, wherein the UE is configured via a downlink assignment index (DAI), indicated in the downlink grant that schedules the first PUCCH communication, for acknowledgement or negative acknowledgement (ACK/NACK) feedback.

~~20~~19. The method of claim ~~15~~14, wherein the UE is configured to multiplex an acknowledgement (ACK) corresponding to the second PUCCH communication with the PUSCH communication and the first PUCCH communication based at least in part on a determination that a physical downlink control channel (PDCCH) communication, that schedules the second PUCCH communication, is received before the threshold time and that the PDCCH communication does not schedule a PDSCH communication.

~~21~~20. The method of claim ~~15~~14, wherein the UE is configured to drop the second PUCCH communication based at least in part on a determination that a downlink grant, that schedules the second PUCCH communication, is received after the threshold time.

~~22~~21. The method of claim ~~21~~20, wherein the UE is configured via a downlink assignment index (DAI), indicated in the downlink grant that schedules the first PUCCH communication, for acknowledgement or negative acknowledgement (ACK/NACK) feedback.

~~23~~22. The method of claim 1, wherein the PUSCH communication is a first PUSCH communication that is multiplexed with the PUCCH communication based at least in part on a determination that the uplink grant, the downlink grant, and the PDSCH communication are received before the threshold time, and wherein a second PUSCH communication, scheduled by a downlink grant received before the threshold time, is scheduled to overlap one or more symbols of the PUCCH communication.

~~24~~23. The method of claim ~~23~~22, wherein the PUCCH communication is piggybacked in the first PUSCH communication based at least in part on a determination that the first PUSCH communication has an earlier starting symbol than the second PUSCH communication.

~~25~~24. The method of claim ~~23~~22, wherein the PUCCH communication is piggybacked in the first PUSCH communication based at least in part on a determination that the first PUSCH communication has a larger number of assigned resources than the second PUSCH communication.

~~26~~25. The method of claim ~~23~~22, wherein the PUCCH communication is piggybacked in both the first PUSCH communication and the second PUSCH communication.

~~27~~26. A user equipment (UE) for wireless communication, comprising:

memory; and

one or more processors operatively coupled to the memory, the memory and the one or more processors configured to:

determine that a physical uplink shared channel (PUSCH) communication, scheduled by an uplink grant, and a physical uplink control channel (PUCCH) communication, corresponding to a physical downlink shared channel (PDSCH) communication scheduled by a downlink grant, are scheduled to overlap in one or more symbols;

determine a threshold time based at least in part on an earliest scheduled starting time of the PUSCH communication or the PUCCH communication;

selectively multiplex the PUSCH communication and the PUCCH communication based at least in part on whether the uplink grant, the downlink grant, and the PDSCH communication are received before the threshold time~~; and~~ , wherein the UE does not multiplex the PUSCH communication and the PUCCH communication if at least one of the uplink grant, the downlink grant, or a last symbol of the PDSCH communication is received after the threshold time; and transmit the PUSCH communication, the PUCCH communication, or both the PUSCH communication and the PUCCH communication based at least in part on the selective multiplexing.

~~28~~27. The UE of claim ~~27~~26, wherein the PUSCH communication and the PUCCH communication are scheduled to start in different symbols, and wherein the earliest scheduled starting time is determined based at least in part on whichever of the PUSCH communication or the PUCCH communication is scheduled to start in an earlier symbol.

~~29~~28. The UE of claim ~~27~~26, wherein the UE is configured to multiplex the PUSCH communication and the PUCCH communication based at least in part on a determination that the uplink grant, the downlink grant, and a last symbol of the PDSCH communication are received before the threshold time.

~~30. The UE of claim 27, wherein the UE is configured to prevent multiplexing of the PUSCH communication and the PUCCH communication based at least in part on a~~

~~determination that at least one of the uplink grant, the downlink grant, or a last symbol of the PDSCH communication is received after the threshold time.~~

~~31. The UE of claim 27~~29. The UE of claim 26, wherein the threshold time is determined based at least in part on a PUSCH processing time and a scheduled starting time of the PUSCH communication when the PUSCH communication is scheduled to start in an earlier symbol than the PUCCH communication.

~~32~~30. The UE of claim ~~27~~26, wherein the threshold time is determined based at least in part on a PUCCH processing time, a duration of the PDSCH communication or a preconfigured value, and a scheduled starting time of the PUCCH communication when the PUCCH communication is scheduled to start in an earlier symbol than the PUSCH communication.

~~33~~31. The UE of claim ~~27~~26, wherein the threshold time is a number of symbols before an initial symbol of whichever one of the PUSCH communication or the PUCCH communication that starts in an earlier symbol.

~~34~~32. The UE of claim ~~33~~31, wherein the number corresponds to a maximum value of a first threshold time determined based at least in part on a PUSCH processing time and a second threshold time determined based at least in part on a PUCCH processing time.

~~35~~33. The UE of claim ~~27~~26, wherein the threshold time is determined based at least in part on a PUSCH processing time or a PUCCH processing time.

~~36~~34. The UE of claim ~~27~~26, wherein the PUSCH communication is a first PUSCH communication that is multiplexed with the PUCCH communication based at least in part on a determination that the uplink grant, the downlink grant, and the PDSCH communication are received before the threshold time, and wherein a second PUSCH communication, scheduled by a downlink grant received before the threshold time, is scheduled to overlap one or more symbols of the PUCCH communication.

~~37~~35. The UE of claim ~~36~~34, wherein the PUCCH communication is piggybacked in the first PUSCH communication based at least in part on a determination that the first PUSCH communication has an earlier starting symbol than the second PUSCH communication.

~~38. A method of wireless communication performed by a base station, comprising:~~

determining that a physical uplink shared channel (PUSCH) communication, scheduled by an uplink grant, and a physical uplink control channel (PUCCH) communication, corresponding to a physical downlink shared channel (PDSCH) communication scheduled by a downlink grant, are scheduled to overlap in one or more symbols;

determining a threshold time based at least in part on an earliest scheduled starting time of the PUSCH communication or the PUCCH communication; and

decoding one or more signals, received in the one or more symbols, based at least in part on whether the uplink grant, the downlink grant, and the PDSCH communication are transmitted before the threshold time.

39. A base station for wireless communication, comprising:

memory; and

one or more processors operatively coupled to the memory, the memory and the one or more processors configured to:

determine that a physical uplink shared channel (PUSCH) communication, scheduled by an uplink grant, and a physical uplink control channel (PUCCH) communication, corresponding to a physical downlink shared channel (PDSCH) communication scheduled by a downlink grant, are scheduled to overlap in one or more symbols;

determine a threshold time based at least in part on an earliest scheduled starting time of the PUSCH communication or the PUCCH communication; and

decode one or more signals, received in the one or more symbols, based at least in part on whether the uplink grant, the downlink grant, and the PDSCH communication are transmitted before the threshold time.