CLAIMS

~~**What is claimed is:**~~

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

receiving, at the UE, a plurality of transmission parameter sets for a random access channel procedure, ~~each of the plurality of transmission parameter sets differing by at least one transmission parameter~~each transmission parameter set including a distinct time resource allocation, frequency resource allocation, or a combination thereof;

selecting a transmission parameter set from the plurality of transmission parameter sets for transmitting a random access channel message of the random access channel procedure, wherein selecting the transmission parameter set comprises selecting the transmission parameter set based on resources to be used for the random access channel message; and

transmitting, to a base station, the random access channel message in accordance with the selected transmission parameter set, the random access channel message including a random access preamble and an information message.

2. The method of claim 1, wherein transmitting the random access channel message further comprises:

transmitting the random access preamble via a random access channel; and

transmitting the information message via a physical uplink control channel or a physical uplink shared channel.

3. The method of claim 2, wherein a first one of the plurality of transmission parameter sets is associated with a first set of resources of the random access channel and a second one of the plurality of transmission parameter sets is associated with a second set of resources of the random access channel.

4. The method of claim 1, wherein a first one of the plurality of transmission parameter sets is associated with a first subset of random access preambles and a second one of the plurality of transmission parameter sets is associated with a second subset of random access preambles.

5. The method of claim 1, wherein a first one of the plurality of transmission parameter sets is associated with a first demodulation reference signal (DMRS) parameter and a second

one of the plurality of transmission parameter sets is associated with a second DMRS parameter.

6. The method of claim 1, wherein selecting the transmission parameter set comprises:
identifying a purpose of the random access channel procedure; and
selecting the transmission parameter set based at least in part on the identified purpose.

7. The method of claim 6, wherein the purpose of the random access channel procedure comprises at least one of an initial access procedure, a radio resource control resume procedure, a timing advance refresh procedure, or a combination thereof.

8. The method of claim 1, wherein selecting the transmission parameter set comprises:
identifying if the random access channel procedure is contention based or contention free; and
selecting the transmission parameter set based at least in part on the identified contention based or contention free random access channel procedure.

9. The method of claim 1, wherein selecting the transmission parameter set comprises:
identifying uplink control information to be transmitted in the random access channel message; and
selecting the transmission parameter set based at least in part on transmitting the uplink control information, whether the uplink control information is carried on a physical uplink shared channel or a physical uplink control channel, a format of the physical uplink control channel used to carry the uplink control information, a modulation order of the uplink control information, a size of the uplink control information, or a combination thereof.

10. The method of claim 1, further comprising:
receiving a configuration for dual connectivity communications with a primary cell and a secondary cell;
selecting the primary cell or the secondary cell for the random access channel procedure;
selecting the transmission parameter set for transmission of the random access channel message based at least in part on which of the primary cell or the secondary cell is selected; and

transmitting the random access channel message to the selected primary cell or secondary cell using the selected transmission parameter set.

11. The method of claim 10, wherein the primary cell or secondary cell is selected based at least in part on a quality of service, a listen-before-transmit outcome, an interference measurement, coverage requirements, or a combination thereof.

12. The method of claim 10, further comprising:

indicating the selected primary cell or secondary cell using a preamble for the random access channel message, a demodulation reference signal for the random access channel message, random access channel resources for the random access channel message, or a combination thereof.

13. The method of claim 1, wherein the plurality of transmission parameter sets for the random access channel procedure are received via radio resource control signaling, system information block transmissions, or specified configurations for the UE.

14. The method of claim 1, wherein the at least one transmission parameter comprises a random access channel preamble for the random access channel message, time and frequency resources for the random access channel message, demodulation reference signal parameters, or a combination thereof.

15. A method for wireless communications at a base station, comprising:

transmitting, to a user equipment (UE), a plurality of transmission parameter sets for a random access channel procedure, ~~each of the plurality of transmission parameter sets differing by at least one transmission parameter~~each transmission parameter set including a distinct time resource allocation, frequency resource allocation, or a combination thereof; and

receiving, from the UE, a random access channel message for the random access channel procedure in accordance with one of the plurality of transmission parameter sets selected based at least in art on resources used for the random access channel message, the random access channel message including a random access preamble and an information message.

16. The method of claim 15, wherein the random access preamble is received via a random access channel, and the information message is received via a physical uplink control channel or a physical uplink shared channel.

17. The method of claim 16, wherein a first one of the plurality of transmission parameter sets is associated with a first set of resources of the random access channel and a second one of the plurality of transmission parameter sets is associated with a second set of resources of the random access channel.

18. The method of claim 15, wherein a first one of the plurality of transmission parameter sets is associated with a first subset of random access preambles and a second one of the plurality of transmission parameter sets is associated with a second subset of random access preambles.

19. The method of claim 15, wherein a first one of the plurality of transmission parameter sets is associated with a first demodulation reference signal (DMRS) parameter and a second one of the plurality of transmission parameter sets is associated with a second DMRS parameter.

20. The method of claim 15, wherein the random access channel procedure is performed for an initial access procedure, a radio resource control resume procedure, a timing advance refresh procedure, or a combination thereof.

21. The method of claim 15, wherein the random access channel procedure is a contention based random access channel procedure or a contention free random access channel procedure.

22. The method of claim 15, further comprising:

transmitting, to the UE, a configuration for dual connectivity communications with a primary cell and a secondary cell; and

receiving the random access channel message on the primary cell or secondary cell.

23. The method of claim 22, further comprising:

receiving an indication of the primary cell or secondary cell via the random access preamble, a demodulation reference signal for the random access channel message, random access channel resources for the random access channel message, or a combination thereof.

24. The method of claim 15, wherein the plurality of transmission parameter sets for the random access channel procedure are transmitted via radio resource control signaling, system information block transmissions, or specified configurations for the UE.

25. The method of claim 15, wherein the at least one transmission parameter comprises a random access channel preamble for the random access channel message, time and frequency resources for the random access channel message, demodulation reference signal parameters, or a combination thereof.

~~26. A method for wireless communications at a user equipment (UE), comprising:~~

~~receiving a timing advance parameter and an alignment timer, the alignment timer specifying a time window for which the timing advance parameter is valid for transmissions via a data channel;~~

~~determining that the time window has expired; and~~

~~transmitting a data message on the data channel subsequent to the expiration of the time window based at least in part on the data message being transmitted with a random access preamble of a random access procedure.~~

~~27. The method of claim 26, further comprising:~~

~~receiving a second timer specifying a second time window for which transmissions via the data channel are valid, the second time window commencing at a time after the expiration of the time window, wherein the data message is transmitted during the second time window.~~

~~28. The method of claim 26, wherein the transmission is a message A of a two-step random access procedure or a message 3 of a four-step random access procedure.~~

~~29~~26. An apparatus for wireless communications at a user equipment (UE), comprising:

means for receiving, at the UE, a plurality of transmission parameter sets for a random access channel procedure, ~~each of the plurality of transmission parameter sets differing by at~~

~~least one transmission parameter~~each transmission parameter set including a distinct time resource allocation, frequency resource allocation, or a combination thereof;

means for selecting a transmission parameter set from the plurality of transmission parameter sets for transmitting a random access channel message of the random access channel procedure, wherein selecting the transmission parameter set comprises selecting the transmission parameter set based on resources to be used for the random access channel message; and

means for transmitting, to a base station, the random access channel message in accordance with the selected transmission parameter set, the random access channel message including a random access preamble and an information message.

~~30~~27. The apparatus of claim ~~29~~26, wherein the means for transmitting the random access channel message comprises:

means for transmitting the random access preamble via a random access channel; and

means for transmitting the information message via a physical uplink control channel or a physical uplink shared channel.

~~31~~28. The apparatus of claim ~~30~~27, wherein a first one of the plurality of transmission parameter sets is associated with a first set of resources of the random access channel and a second one of the plurality of transmission parameter sets is associated with a second set of resources of the random access channel.

~~32~~29. The apparatus of claim ~~29~~26, wherein a first one of the plurality of transmission parameter sets is associated with a first subset of random access preambles and a second one of the plurality of transmission parameter sets is associated with a second subset of random access preambles.

~~33~~30. The apparatus of claim ~~29~~26, wherein a first one of the plurality of transmission parameter sets is associated with a first demodulation reference signal (DMRS) parameter and a second one of the plurality of transmission parameter sets is associated with a second DMRS parameter.

~~34~~31. The apparatus of claim ~~29~~26, wherein the means for selecting the transmission parameter set comprises:

means for identifying a purpose of the random access channel procedure; and

means for selecting the transmission parameter set based at least in part on the identified purpose.

~~35~~32. The apparatus of claim ~~34~~31, wherein the purpose of the random access channel procedure comprises at least one of an initial access procedure, a radio resource control resume procedure, a timing advance refresh procedure, or a combination thereof.

~~36~~33. The apparatus of claim ~~29~~26, wherein the means for selecting the transmission parameter set comprises:

means for identifying if the random access channel procedure is contention based or contention free; and

means for selecting the transmission parameter set based at least in part on the identified contention based or contention free random access channel procedure.

~~37~~34. The apparatus of claim ~~29~~26, wherein the means for selecting the transmission parameter set comprises:

means for identifying uplink control information to be transmitted in the random access channel message; and

means for selecting the transmission parameter set based at least in part on transmitting the uplink control information, whether the uplink control information is carried on a physical uplink shared channel or a physical uplink control channel, a format of the physical uplink control channel used to carry the uplink control information, a modulation order of the uplink control information, a size of the uplink control information, or a combination thereof.

~~38~~35. The apparatus of claim ~~29~~26, further comprising:

means for receiving a configuration for dual connectivity communications with a primary cell and a secondary cell;

means for selecting the primary cell or the secondary cell for the random access channel procedure;

means for selecting the transmission parameter set for transmission of the random access channel message based at least in part on which of the primary cell or the secondary cell is selected; and

means for transmitting the random access channel message to the selected primary cell or secondary cell using the selected transmission parameter set.

~~39~~36. The apparatus of claim ~~38~~35, wherein the primary cell or secondary cell is selected based at least in part on a quality of service, a listen-before-transmit outcome, an interference measurement, coverage requirements, or a combination thereof.

~~40~~37. The apparatus of claim ~~38~~35, further comprising:

means for indicating the selected primary cell or secondary cell using a preamble for the random access channel message, a demodulation reference signal for the random access channel message, random access channel resources for the random access channel message, or a combination thereof.

~~41~~38. The apparatus of claim ~~29~~26, wherein the plurality of transmission parameter sets for the random access channel procedure are received via radio resource control signaling, system information block transmissions, or specified configurations for the UE.

~~42~~39. The apparatus of claim ~~29~~26, wherein the at least one transmission parameter comprises a random access channel preamble for the random access channel message, time and frequency resources for the random access channel message, demodulation reference signal parameters, or a combination thereof.

~~43~~40. An apparatus for wireless communications at a base station, comprising:

means for transmitting, to a user equipment (UE), a plurality of transmission parameter sets for a random access channel procedure, ~~each of the plurality of transmission parameter sets differing by at least one transmission parameter~~each transmission parameter set including a distinct time resource allocation, frequency resource allocation, or a combination thereof; and

means for receiving, from the UE, a random access channel message for the random access channel procedure in accordance with one of the plurality of transmission parameter sets selected based at least in part on resources used for the random access channel message, the random access channel message including a random access preamble and an information message.

~~44~~41. The apparatus of claim ~~43~~40, wherein the random access preamble is received via a random access channel, and the information message is received via a physical uplink control channel or a physical uplink shared channel.

~~45~~42. The apparatus of claim ~~44~~41, wherein a first one of the plurality of transmission parameter sets is associated with a first set of resources of the random access channel and a second one of the plurality of transmission parameter sets is associated with a second set of resources of the random access channel.

~~46~~43. The apparatus of claim ~~43~~40, wherein a first one of the plurality of transmission parameter sets is associated with a first subset of random access preambles and a second one of the plurality of transmission parameter sets is associated with a second subset of random access preambles.

~~47~~44. The apparatus of claim ~~43~~40, wherein a first one of the plurality of transmission parameter sets is associated with a first demodulation reference signal (DMRS) parameter and a second one of the plurality of transmission parameter sets is associated with a second DMRS parameter.

~~48~~45. The apparatus of claim ~~43~~40, wherein the random access preamble is a contention based random access preamble or a contention free random access preamble.

~~49~~46. The apparatus of claim ~~43~~40, further comprising:

means for transmitting, to the UE, a configuration for dual connectivity communications with a primary cell and a secondary cell; and

means for receiving the random access channel message on the primary cell or secondary cell.

~~50~~47. The apparatus of claim ~~49~~46, further comprising:

means for receiving an indication of the primary cell or secondary cell via a preamble of the random access channel message, a demodulation reference signal for the random access channel message, random access channel resources for the random access channel message, or a combination thereof.

~~51~~48. The apparatus of claim ~~43~~40, wherein the means for transmitting the random access channel message comprises:

means for receiving the random access preamble via a random access channel; and

means for receiving the information message via an information channel.

~~52~~49. The apparatus of claim ~~51~~48, wherein the information channel comprises a physical uplink control channel or a physical uplink shared channel.

~~53~~50. The apparatus of claim ~~43~~40, wherein the plurality of transmission parameter sets for the random access channel procedure are transmitted via radio resource control signaling, system information block transmissions, or specified configurations for the UE.

~~54~~51. The apparatus of claim ~~43~~40, wherein the at least one transmission parameter comprises a random access channel preamble for the random access channel message, time and frequency resources for the random access channel message, demodulation reference signal parameters, or a combination thereof.

~~55. An apparatus for wireless communications at a user equipment (UE), comprising:~~

~~means for receiving a timing advance parameter and an alignment timer, the alignment timer specifying a time window for which the timing advance parameter is valid for transmissions via a data channel;~~

~~means for determining that the time window has expired; and~~

~~means for transmitting a data message on the data channel subsequent to the expiration of the time window based at least in part on the data message being transmitted with a random access preamble of a random access procedure.~~

~~56. The apparatus of claim 55, further comprising:~~

~~means for receiving a second timer specifying a second time window for which transmissions via the data channel are valid, the second time window commencing at a time after the expiration of the time window, wherein the data message is transmitted during the second time window.~~

~~57. The apparatus of claim 55, wherein the transmission is a message A of a two-step random access procedure or a message three of a four-step random access procedure.~~