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REPLACEMENT SHEET CLAIMS**What is claimed is:**

1. A method comprising:
operating a wireless transmit receive unit (WTRU) in a first scheduling mode for device-to-device communication, wherein in the first scheduling mode a network entity schedules resources to be used by the WTRU for device-to-device communications;
detecting that a radio resource control (RRC) timer is running or has been started, wherein the RRC timer indicates a failure condition; and
switching the WTRU from the first scheduling mode for device-to-device communication to a second scheduling mode for device-to-device communication in response to detecting that the RRC timer is running or has been started, wherein in the second scheduling mode the WTRU autonomously selects a resource from a resource pool for the WTRU to use for one or more device-to-device communications.
2. The method of claim 1, wherein the RRC timer comprises a radio link failure (RLF) timer.
3. The method of claim 1, wherein the RRC timer comprises a timer T310.
4. The method of claim 1, wherein the RRC timer starts in response to a number of consecutive out-of-synch transmit time intervals (TTIs) exceeding a threshold.
5. The method of claim 1, wherein the RRC timer comprises a timer T311.
6. The method of claim 1, wherein the RRC timer starts in response to a RRC connection re-establishment procedure being initiated.
7. The method of claim 1, wherein the RRC timer comprises a timer T301.
8. The method of claim 7, further comprising ceasing operation of the WTRU in the second scheduling mode upon detecting that the timer T301 is not running.

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9. The method of claim 1, wherein the RRC timer starts in response to a request to reestablish radio resource control (RRC) connection being transmitted.
10. The method of claim 9, further comprising ceasing operation of the WTRU in the second scheduling mode upon reestablishment of the RRC connection.
11. The method of claim 1, wherein operating the WTRU in the second scheduling mode comprises operating the WTRU using fixed power control.
12. A wireless transmit/receive unit (WTRU) comprising:
a processor configured to:
operate the WTRU in a first scheduling mode for device-to-device communication, wherein in the first scheduling mode a network entity schedules resources to be used by the WTRU for device-to-device communications;
detecting that a radio resource configuration (RRC) timer is running or has been started, wherein the RRC timer indicates a failure condition; and
switching the WTRU from the first scheduling mode for device-to-device communication to a second scheduling mode for device-to-device communication in response to detecting that the RRC timer is running or has been started, wherein in the second scheduling mode the WTRU autonomously selects a resource from a resource pool for the WTRU to use for one or more device-to-device communications.
13. The WTRU of claim 12, wherein the RRC timer comprises a radio link failure (RLF) timer.
14. The WTRU of claim 12, wherein the RRC timer comprises a timer T310.
15. The WTRU of claim 12, wherein the RRC timer starts in response to a number of consecutive out-of-synch transmit time intervals (TTIs) exceeding a threshold.
16. The WTRU of claim 12, wherein the RRC timer comprises a timer T311.
17. The WTRU of claim 12, wherein the RRC timer starts in response to a RRC connection re-establishment procedure being initiated.

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18. The WTRU of claim 12, wherein the RRC timer comprises a timer T301.
19. The WTRU of claim 18, wherein the processor is further configured to:
detect that the timer 301 has expired; and
cease operation of the WTRU in the second scheduling mode upon expiration of the timer T301.
20. The WTRU of claim 12, wherein the RRC timer starts in response to a request to reestablish radio resource control (RRC) connection being transmitted.
21. The WTRU of claim 20, wherein the processor is further configured to:
detect reestablishment of the RRC connection; and
cease operation of the WTRU in the second scheduling mode upon reestablishment of the RRC connection.
22. The WTRU of claim 12, wherein the processor is configured to operate the WTRU using fixed power control in the second scheduling mode.
23. – 42. (Canceled)
43. A method performed by a wireless transmit/receive unit (WTRU), the method comprising:
determining that the WTRU has device-to-device communication to transmit while in a RRC_IDLE mode;
initiating radio resource control (RRC) connection establishment and starting a RRC timer, wherein the RRC timer indicates a failure condition;
detecting that the timer has expired;
operating in a second scheduling mode for device-to-device communication in response to detecting that the RRC timer has expired, wherein in the second scheduling mode the WTRU autonomously selects a resource from a resource pool for the WTRU to use for one or more device-to-device communications.

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44. The method of claim 43, wherein the RRC timer starts in response to a RRC connection re-establishment procedure being initiated.
45. The method of claim 43, wherein the RRC timer starts in response to a request to reestablish radio resource control (RRC) connection being transmitted.
46. The method of claim 43, wherein the RRC timer comprises a timer T300.
47. The method of claim 43, further comprising ceasing operation of the WTRU in the second scheduling mode upon reestablishment of the RRC connection.
48. The method of claim 47, further comprising operating in a first scheduling mode for device-to-device communication based on the reestablishment of the RRC connection, wherein in the first scheduling mode a network entity schedules resources to be used by the WTRU for device-to-device communications;
49. The method of claim 43, wherein operating the WTRU in the second scheduling mode comprises operating the WTRU using fixed power control.
50. The method of claim 43, wherein the WTRU initiates RRC connection establishment to transmit the device-to-device communication.
51. A wireless transmit/receive unit (WTRU) comprising:
a processor configured to:
determine that the WTRU has device-to-device communication to transmit while in a RRC_IDLE mode;
initiate radio resource control (RRC) connection establishment and start a RRC timer, wherein the RRC timer indicates a failure condition;
detect that the timer has expired;
operate in a second scheduling mode for device-to-device communication in response to detecting that the RRC timer has expired, wherein in the second scheduling mode the WTRU autonomously selects a resource from a resource pool for the WTRU to use for one or more device-to-device communications.

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52. The WTRU of claim 51, wherein the RRC timer starts in response to a RRC connection re-establishment procedure being initiated.

53. The WTRU of claim 51, wherein the RRC timer starts in response to a request to reestablish radio resource control (RRC) connection being transmitted.

54. The WTRU of claim 51, wherein the RRC timer comprises a timer T300.

55. The WTRU of claim 51, wherein the processor is further configured to cease operation of the WTRU in the second scheduling mode upon reestablishment of the RRC connection.

56. The WTRU of claim 55, wherein the processor is further configured to operate in a first scheduling mode for device-to-device communication based on the reestablishment of the RRC connection, wherein in the first scheduling mode a network entity schedules resources to be used by the WTRU for device-to-device communications;

57. The WTRU of claim 51, wherein the processor is configured to operate the WTRU in the second scheduling mode comprises the processor is configured to operate the WTRU using fixed power control.

58. The WTRU of claim 51, wherein the WTRU initiates RRC connection establishment to transmit the device-to-device communication.

Claims:

1. A method comprising:
operating a wireless transmit receive unit (WTRU) in a first scheduling mode for device-to-device communication, wherein in the first scheduling mode a network entity schedules resources to be used by the WTRU for device-to-device communications;
detecting that a radio resource control (RRC) timer is running or has been started, wherein the RRC timer indicates a failure condition; and
switching the WTRU from the first scheduling mode for device-to-device communication to a second scheduling mode for device-to-device communication in response to detecting that the RRC timer is running or has been started, wherein in the second scheduling mode the WTRU autonomously selects a resource from a resource pool for the WTRU to use for one or more device-to-device communications.
2. The method of claim 1, wherein the RRC timer comprises a radio link failure (RLF) timer.
3. The method of claim 1, wherein the RRC timer comprises a timer T310.
4. The method of claim 1, wherein the RRC timer starts in response to a number of consecutive out-of-synch transmit time intervals (TTIs) exceeding a threshold.
5. The method of claim 1, wherein the RRC timer comprises a timer T311.
6. The method of claim 1, wherein the RRC timer starts in response to a RRC connection re-establishment procedure being initiated.
7. The method of claim 1, wherein the RRC timer comprises a timer T301.
8. The method of claim 7, further comprising ceasing operation of the WTRU in the second scheduling mode upon detecting that the timer T301 is not running.

9. The method of claim 1, wherein the RRC timer starts in response to a request to reestablish radio resource control (RRC) connection being transmitted.

10. The method of claim 9, further comprising ceasing operation of the WTRU in the second scheduling mode upon reestablishment of the RRC connection.

11. The method of claim 1, wherein operating the WTRU in the second scheduling mode comprises operating the WTRU using fixed power control.

12. A wireless transmit/receive unit (WTRU) comprising:
a processor configured to:

operate the WTRU in a first scheduling mode for device-to-device communication, wherein in the first scheduling mode a network entity schedules resources to be used by the WTRU for device-to-device communications;

detecting that a radio resource configuration (RRC) timer is running or has been started, wherein the RRC timer indicates a failure condition; and

switching the WTRU from the first scheduling mode for device-to-device communication to a second scheduling mode for device-to-device communication in response to detecting that the RRC timer is running or has been started, wherein in the second scheduling mode the WTRU autonomously selects a resource from a resource pool for the WTRU to use for one or more device-to-device communications.

13. The WTRU of claim 12, wherein the RRC timer comprises a radio link failure (RLF) timer.

14. The WTRU of claim 12, wherein the RRC timer comprises a timer T310.

15. The WTRU of claim 12, wherein the RRC timer starts in response to a number of consecutive out-of-synch transmit time intervals (TTIs) exceeding a threshold.

16. The WTRU of claim 12, wherein the RRC timer comprises a timer T311.
17. The WTRU of claim 12, wherein the RRC timer starts in response to a RRC connection re-establishment procedure being initiated.
18. The WTRU of claim 12, wherein the RRC timer comprises a timer T301.
19. The WTRU of claim 18, wherein the processor is further configured to:
detect that the timer T301 has expired; and
cease operation of the WTRU in the second scheduling mode upon expiration of the timer T301.
20. The WTRU of claim 12, wherein the RRC timer starts in response to a request to reestablish radio resource control (RRC) connection being transmitted.
21. The WTRU of claim 20, wherein the processor is further configured to:
detect reestablishment of the RRC connection; and
cease operation of the WTRU in the second scheduling mode upon reestablishment of the RRC connection.
22. The WTRU of claim 12, wherein the processor is configured to operate the WTRU using fixed power control in the second scheduling mode.
23. A method performed by a wireless transmit/receive unit (WTRU), the method comprising:
determining that the WTRU has device-to-device communication to transmit while in a RRC_IDLE mode;
initiating radio resource control (RRC) connection establishment and starting a RRC timer, wherein the RRC timer indicates a failure condition;
detecting that the timer has expired;

operating in a second scheduling mode for device-to-device communication in response to detecting that the RRC timer has expired, wherein in the second scheduling mode the WTRU autonomously selects a resource from a resource pool for the WTRU to use for one or more device-to-device communications.

24. The method of claim 23, wherein the RRC timer starts in response to a RRC connection re-establishment procedure being initiated.

25. The method of claim 23, wherein the RRC timer starts in response to a request to reestablish radio resource control (RRC) connection being transmitted.

26. The method of claim 23, wherein the RRC timer comprises a timer T300.

27. The method of claim 23, further comprising ceasing operation of the WTRU in the second scheduling mode upon reestablishment of the RRC connection.

28. The method of claim 27, further comprising operating in a first scheduling mode for device-to-device communication based on the reestablishment of the RRC connection, wherein in the first scheduling mode a network entity schedules resources to be used by the WTRU for device-to-device communications.

29. The method of claim 23, wherein operating the WTRU in the second scheduling mode comprises operating the WTRU using fixed power control.

30. The method of claim 23, wherein the WTRU initiates RRC connection establishment to transmit the device-to-device communication.

31. A wireless transmit/receive unit (WTRU) comprising:
a processor configured to:
determine that the WTRU has device-to-device communication to transmit while in a RRC_IDLE mode;

initiate radio resource control (RRC) connection establishment and start a RRC timer, wherein the RRC timer indicates a failure condition;

detect that the timer has expired;

operate in a second scheduling mode for device-to-device communication in response to detecting that the RRC timer has expired, wherein in the second scheduling mode the WTRU autonomously selects a resource from a resource pool for the WTRU to use for one or more device-to-device communications.

32. The WTRU of claim 31, wherein the RRC timer starts in response to a RRC connection re-establishment procedure being initiated.

33. The WTRU of claim 31, wherein the RRC timer starts in response to a request to reestablish radio resource control (RRC) connection being transmitted.

34. The WTRU of claim 31, wherein the RRC timer comprises a timer T300.

35. The WTRU of claim 31, wherein the processor is further configured to cease operation of the WTRU in the second scheduling mode upon reestablishment of the RRC connection.

36. The WTRU of claim 35, wherein the processor is further configured to operate in a first scheduling mode for device-to-device communication based on the reestablishment of the RRC connection, wherein in the first scheduling mode a network entity schedules resources to be used by the WTRU for device-to-device communications.

37. The WTRU of claim 31, wherein the processor is configured to operate the WTRU in the second scheduling mode comprises the processor is configured to operate the WTRU using fixed power control.

38. The WTRU of claim 31, wherein the WTRU initiates RRC connection establishment to transmit the device-to-device communication.