

CLAIMS

~~WHAT IS CLAIMED IS:~~

1.- A method of wireless communication ~~at~~ performed by a base station, comprising:
———~~receiving an indication~~, from a network entity, an indication that a user equipment (UE) is operating in one of a discontinuous reception (DRX) mode or an extended DRX (eDRX) mode; and
———~~configuring, by for the base station UE~~, a wake up signal (WUS) mode ~~for~~ based on the indication that the UE, ~~the WUS mode corresponding to~~ is operating in the DRX mode or the eDRX mode ~~for~~, the UE.

2.——~~The method of claim 1, wherein the base station configures the~~ WUS mode being configured using a first WUS mode to include configuration indicating a mapping between a WUS for each and a paging occasion for the UE associated with the WUS based on the indication indicating that the UE is operating in the DRX mode and using a second WUS configuration that includes a pre-defined look-up table entry indicating a specified number of multiple paging occasions that map to the WUS based on the indication indicating that the UE is operating in the eDRX mode.

2. The method of claim 1, wherein the WUS mode includes the WUS mapping to the paging occasion associated with the WUS based on the indication indicating that the UE is operating in the DRX mode.

3. The method of claim 2, wherein the indication indicates that the UE is operating in at the DRX mode, the method further comprising:

———~~configuring, at for the base station UE~~, a DRX cycle ~~for~~ that includes the UE WUS and the WUS having an associated paging occasion per associated with the WUS bounded within the DRX cycle for the UE.

4. The method of claim 3, wherein the UE comprises a narrow band ~~internet~~ Internet-of-things-Things (NB-IoT) UE, ~~the DRX cycle configured by the base station is cell specific, and the UE is configured~~ method further comprising transmitting, to receive a WUS for each

~~configured the NB-IoT UE, within the DRX cycle, the WUS at the associated paging occasion associated with the WUS.~~

5. The method of claim 3, wherein the UE comprises a machine type communication (MTC) UE, ~~the DRX cycle is specific to the MTC UE, and the UE is configured the method further comprising transmitting, to receive a WUS for each configured the MTC UE, within the DRX cycle, the WUS at the associated paging occasion associated with the WUS.~~

6. The method of claim 1, wherein the WUS mode includes ~~a single the WUS for mapping to the specified number of multiple paging occasions for based on the indication indicating that the UE is operating in the eDRX mode.~~

7. The method of claim 6, wherein ~~a the mapping between the specified number of the multiple paging occasions corresponding to and the single WUS is cell specific.~~

8. The method of claim 7, ~~wherein further comprising determining the specified number of the multiple paging occasions is determined by the base station based on one or more of a pre-defined look-up table entry indicating a paging transmission window (PTW) duration, a duration of a DRX cycle, or a duration of an eDRX cycle.~~

9. The method of claim 7, ~~wherein the number of the multiple paging occasions is further comprising transmitting, in a broadcast transmission to the UE in, system information indicating the specified number of multiple paging occasions.~~

10.- An apparatus for wireless communication at a base station, comprising:

———means for receiving ~~an indication~~, from a network entity, an indication that a user equipment (UE) is operating in one of a discontinuous reception (DRX) mode or an extended DRX (eDRX) mode; and

———means for ~~configuring a wake up signal (WUS) mode for the UE, the WUS mode corresponding to the DRX mode or the eDRX mode for the UE.~~

means for configuring, for the UE, a wake up signal (WUS) mode based on the indication that the UE is operating in the DRX mode or the eDRX mode, the WUS mode being configured using a first WUS configuration indicating a mapping between a WUS and a paging occasion associated with the WUS based on the indication indicating that the UE is operating in the DRX

mode and using a second WUS configuration that includes a pre-defined look-up table entry indicating a specified number of multiple paging occasions that map to the WUS based on the indication indicating that the UE is operating in the eDRX mode.

11. The apparatus of claim 10, ~~further comprising:~~
~~means for configuring wherein the WUS mode includes the WUS mapping to include a WUS for each the paging occasion for associated with the WUS based on the indication indicating that the UE is operating in the DRX mode.~~

12. The apparatus of claim 11, further comprising:
———means for configuring, ~~for the UE,~~ a DRX cycle ~~for that includes the UE WUS and the WUS having an associated paging occasion per associated with the WUS bounded within the DRX cycle for the UE,~~ wherein the indication indicates that the UE is operating in a the DRX mode.

13. The apparatus of claim 12, ~~further comprising wherein the~~ means for configuring the DRX cycle is configured to be cell specific for a narrow band ~~internet- Internet-of-things-Things~~ (NB-IoT) UE.

14. The apparatus of claim 12, ~~further comprising wherein the~~ means for configuring the DRX cycle is configured to be UE specific for a machine type communication (MTC) UE.

15. The apparatus of claim 10, -wherein the WUS mode includes ~~a single the WUS for mapping to the specified number of multiple paging occasions for the UE, based on the indication indicating that the UE is operating in the eDRX mode.~~

16. The apparatus of claim 15, ~~further comprising means for determining a wherein the mapping between the specified number of the multiple paging occasions that and the WUS is cell specific.~~

17. The apparatus of claim 15, -further comprising means for ~~broadcasting transmitting, in a broadcast transmission to the UE, a system information block indicating the specified number of the multiple paging occasions to the UE in system information block.~~

18. An apparatus for wireless communication at a base station, comprising:
a memory; and
at least one processor coupled to the memory and configured to:
 ~~receive an indication, from a network entity, an indication that a user equipment~~
 (UE) is operating in one of a discontinuous reception (DRX) mode or an extended DRX (eDRX) mode; and
 ~~configure a wake up signal (WUS) mode for the UE, the WUS mode~~
 ~~corresponding to the DRX mode or the eDRX mode for the UE.~~
 configure, for the UE, a wake up signal (WUS) mode based on the indication that
 the UE is operating in the DRX mode or the eDRX mode, the WUS mode being
 configured using a first WUS configuration indicating a mapping between a WUS and a
 paging occasion associated with the WUS based on the indication indicating that the UE
 is operating in the DRX mode and using a second WUS configuration that includes a pre-
 defined look-up table entry indicating a specified number of multiple paging occasions
 that map to the WUS based on the indication indicating that the UE is operating in the
 eDRX mode.
19. The apparatus of claim 18, wherein the ~~at least one processor is further configured~~ WUS
mode includes the WUS mapping to: the paging occasion associated with the WUS based on the
indication indicating that the UE is operating in the DRX mode.
 ~~configure the WUS mode to include a WUS for each paging occasion for the UE.~~
20. The apparatus of claim 18, wherein the at least one processor is further configured to:
 ~~configure~~ Configure, for the UE, a DRX cycle for that includes the UE WUS and
 the WUS having an associated paging occasion per associated with the WUS bounded within the
 DRX cycle for the UE, wherein the indication indicates that the UE is operating in at the DRX
 mode.
21. The apparatus of claim 18, wherein the ~~at least one processor is further configured to:~~

~~configure the WUS mode to include a single WUS for~~ includes the WUS mapping to the specified number of multiple paging occasions for the UE based on the indication indicating that the UE is operating in the eDRX mode.

22. ~~The apparatus of claim 21, wherein the at least one processor is further configured to:~~
~~determine a mapping between the specified number of the multiple paging occasions that and the~~
WUS is cell specific.

23. ~~AA non-transitory computer-readable medium storing computer executable code for~~
~~wireless communication at a User Equipment (UE) base station (BS), comprising code, which~~
when executed by at least one processor, causes the BS to:

~~receive an indication, from a network entity, an indication that a user equipment~~
~~(UE) is operating in one of a discontinuous reception (DRX) mode or an extended DRX~~
~~(eDRX) mode; and~~
~~configure a wake up signal (WUS) mode for the UE, the WUS mode~~
corresponding to the DRX mode or the eDRX mode for the UE.

configure, for the UE, a wake up signal (WUS) mode based on the indication that
the UE is operating in the DRX mode or the eDRX mode, the WUS mode being
configured using a first WUS configuration indicating a mapping between a WUS and a
paging occasion associated with the WUS based on the indication indicating that the UE
is operating in the DRX mode and using a second WUS configuration that includes a pre-
defined look-up table entry indicating a specified number of multiple paging occasions
that map to the WUS based on the indication indicating that the UE is operating in the
eDRX mode.

24. ~~The non-transitory computer-readable medium of claim 23, further comprising~~
~~code wherein the WUS mode includes the WUS mapping to: the paging occasion associated with~~
the WUS based on the indication indicating that the UE is operating in the DRX mode.

~~configure the WUS mode to include a WUS for each paging occasion for the UE.~~

25. The non-transitory computer-readable medium of claim 24, further comprising code, which when executed by the at least one processor, causes the BS to:

———configure, for the UE, a DRX cycle for that includes the UE WUS and the WUS having an associated paging occasion per associated with the WUS bounded within the DRX cycle for the UE, wherein the indication indicates that the UE is operating in a the DRX mode.

26. The non-transitory computer-readable medium of claim 23, ~~further comprising code to:~~ configure wherein the WUS mode to include a single includes the WUS for mapping to the specified number of multiple paging occasions for based on the indication indicating that the UE is operating in the eDRX mode.

27. The non-transitory computer-readable medium of claim 26, ~~further comprising code to:~~ wherein the mapping between the specified number of multiple paging occasions and the WUS is cell specific.

~~determine a number of the multiple paging occasions that is cell specific.~~

28.- A method of wireless communication ~~at~~ performed by a User Equipment (UE), comprising:

———receiving a, from a base station, a first wake up signal (WUS) configuration from a base station for the UE for one of for a discontinuous reception (DRX) mode or an extended DRX (eDRX) mode indicating a mapping between a WUS and a paging occasion associated with the WUS and a second WUS configuration for an extended DRX (eDRX) mode that includes a pre-defined look-up table entry indicating a specified number of multiple paging occasions that map to the WUS; and

listening for a the WUS prior to a the paging occasion based on the received first WUS configuration from or the base station second WUS configuration.

29. The method of claim 28, ~~wherein~~ further comprising receiving the WUS configuration includes a WUS for each at the paging occasion associated with the WUS based on the UE operating in the DRX mode.

30. The method of claim 29, wherein the UE is operating in a DRX mode, the method further comprising:

—receiving, from the base station, a DRX cycle configuration ~~for~~that includes the ~~UE WUS and the WUS having an associated paging occasion per~~associated with the WUS ~~bounded within a DRX cycle for the UE.~~

31. The method of claim 30, wherein the UE comprises a narrow band ~~internet~~ Internet-of things-Things (NB-IoT) UE, the DRX cycle configured by the base station is cell specific, and the ~~UE assumes a WUS will~~method further comprising determining that the WUS is scheduled to be transmitted for each configured at the paging occasion associated with the WUS within the DRX cycle at the associated paging occasion.

32. The method of claim 30, wherein the UE comprises a machine type communication (MTC) UE, ~~the DRX cycle is specific to the MTC UE, and the UE assumes a~~method further comprising determining that the WUS will~~is scheduled to be transmitted for each configured DRX cycle at the associated paging occasion~~associated with the WUS within the DRX cycle.

33. The method of claim 28, ~~wherein~~further comprising receiving the WUS configuration comprises a single WUS for ~~at one or more of the specified number of multiple paging occasions based on the UE operating in the eDRX mode.~~

34. The method of claim 33, wherein ~~a~~ the mapping between the specified number of the multiple paging occasions ~~corresponding to and the single WUS is cell specific.~~

35. The method of claim 34, wherein the mapping of the specified number of the multiple paging occasions is ~~determined by the base station~~based on one or more of a pre-defined look-up table entry indicating a paging transmission window (PTW) duration, a duration of a DRX cycle, or a duration of an eDRX cycle.

36. The method of claim 34, further comprising:
receiving, in a broadcast transmission to the UE, system information comprising an indication of the specified number of the multiple paging occasions ~~in a broadcast of system information.~~

37.- An apparatus for wireless communication at a User Equipment (UE), comprising:

—means for receiving ~~a, from a base station, a first~~ wake up signal (WUS) configuration ~~from a base station for the UE for one of~~ a discontinuous reception (DRX) mode ~~or indicating a mapping between a WUS and a paging occasion associated with the WUS and a second WUS configuration for an extended DRX (eDRX) mode that includes a pre-defined look-up table entry indicating a specified number of multiple paging occasions that map to the WUS;~~ and

means for listening for ~~a~~the WUS prior to ~~a~~the paging occasion based on the ~~received~~first WUS configuration from or the base stationsecond WUS configuration.

38. The apparatus of claim 37, further comprising:

means for receiving a DRX cycle configuration ~~for~~that includes the UEWUS and the WUS having an associated paging occasion per DRX associated with the WUS bounded within a DRX cycle for the UE, wherein the UE is operating in a DRX mode.

39. The apparatus of claim 37, further comprising:

~~means for receiving the WUS configuration comprising a single WUS for~~at one or more of the specified number of multiple paging occasions based on the UE operating in the eDRX mode.

40. The apparatus of claim 39, further comprising:

means for receiving, in a broadcast transmission to the UE, system information comprising an indication of a the specified number of the multiple paging occasions~~in a broadcast of system information.~~

41.- An apparatus for wireless communication at a user equipment (UE), comprising:

a memory; and

at least one processor coupled to the memory and configured to:

~~receive a, from a base station, a first~~ wake up signal (WUS) configuration ~~from a base station for the UE for one of~~ a discontinuous reception (DRX) mode ~~or indicating a mapping between a WUS and a paging occasion associated with the WUS and a second WUS configuration for an extended DRX (eDRX) mode that includes a pre-defined look-up table entry indicating a specified number of multiple paging occasions that map to the WUS;~~ and

listen for ~~a~~ the WUS prior to ~~a~~ the paging occasion based on the ~~received~~ first WUS configuration ~~from~~ or the ~~base station~~ second WUS configuration.

~~42.~~ The apparatus of claim 41, wherein the at least one processor is further configured to:
~~receive a DRX cycle configuration for the UE and the WUS having an associated paging occasion per DRX cycle for the UE, wherein the UE is in a DRX mode.~~

~~43.~~ 42. The apparatus of claim 41, wherein the at least one processor is further configured to:
receive a DRX cycle configuration that includes the WUS and the paging occasion associated with the WUS bounded within a DRX cycle, wherein the UE is operating in the DRX mode.

43. The apparatus of claim 41, wherein the at least one processor is further configured to
receive the WUS ~~configuration comprising a single WUS for~~ at one or more of the specified number of multiple paging occasions based on the UE operating in the eDRX mode.

44. The apparatus of claim 43, wherein the at least one processor is further configured to:
~~receive~~ receive, in a broadcast transmission to the UE, system information comprising an indication of a ~~the specified~~ number of the multiple paging occasions in a broadcast of system information.

45.- A non-transitory computer-readable medium storing computer executable code for wireless communication at a User Equipment (UE), comprising code to:

~~receive a~~, from a base station, a first wake up signal (WUS) configuration ~~from a base station for the UE for one of a discontinuous reception (DRX) mode or~~ indicating a mapping between a WUS and a paging occasion associated with the WUS and a second WUS configuration for an extended DRX (eDRX) mode that includes a pre-defined look-up table entry indicating a specified number of multiple paging occasions that map to the WUS; and

listen for a ~~the~~ the WUS prior to ~~a~~ the paging occasion based on the ~~received~~ first WUS configuration ~~from~~ or the ~~base station~~ second WUS configuration.

46. The non-transitory computer-readable medium of claim 45, further comprising code to:

~~receive a DRX cycle configuration for that includes the UEWUS and the WUS having an associated paging occasion per associated with the WUS bounded within a DRX cycle for the UE, wherein the UE is operating in at the DRX mode.~~

47. The non-transitory computer-readable medium of claim 45, further comprising code to: receive the WUS configuration comprising a single WUS for at one or more of the specified number of multiple paging occasions based on the UE operating in the eDRX mode.

48. The non-transitory computer-readable medium of claim 47, further comprising code to: ~~receive an indication of a number of the multiple paging occasions,~~ in a broadcast of transmission to the UE, system information;

49. ~~A method of wireless communication at a User Equipment (UE), comprising:~~
~~entering a relaxed Radio Resource Management (RRM) measurement with a first cell,~~
~~wherein the relaxed RRM measurement comprises a single RRM measurement for more than one DRX cycle;~~
~~reselecting to a second cell that supports the relaxed RRM measurement; and~~
~~returning to a regular RRM measurement for a time period, wherein the regular RRM measurement comprises one RRM measurement for each DRX cycle.~~

50. ~~The method of claim 49, wherein the time period is based on an indication received from a base station via a broadcast system information.~~

51. ~~The method of claim 49, wherein the time period is calculated based on configuration parameters for the relaxed RRM measurement received from a base station via a broadcast system information.~~

52. ~~The method of claim 49, wherein the time period is based at least in part on a predefined minimum duration.~~

53. ~~The method of claim 52, wherein~~of ~~the predefined minimum duration comprises a time length for the UE to perform an RRM measurement to meet an accuracy requirement.~~

54. ~~The method of claim 52, wherein the predefined minimum duration comprises a time length corresponding to the UE being identified as a low mobility UE.~~

55. ~~An apparatus for wireless communication at a User Equipment (UE), comprising:~~
~~—— means for entering a relaxed Radio Resource Management (RRM) measurement with a first cell, wherein the relaxed RRM measurement comprises a single RRM measurement for more than one DRX cycle;~~
~~—— means for reselecting to a second cell that supports the relaxed RRM measurement; and~~
~~—— means for returning to a regular RRM measurement for a time period, wherein the regular RRM measurement comprises one RRM measurement for each DRX cycle.~~

56. ~~The apparatus of claim 55, further comprising:~~
~~means for receiving an indication of the time period from a base station via a broadcast system information.~~

57. ~~An apparatus for wireless communication at a user equipment (UE), comprising:~~
~~a memory; and~~
~~at least one processor coupled to the memory and configured to:~~
~~—— enter a relaxed Radio Resource Management (RRM) measurement with a first cell, wherein the relaxed RRM measurement comprises a single RRM measurement for more than one DRX cycle;~~
~~—— reselect to a second cell that supports the relaxed RRM measurement; and~~
~~—— return to a regular RRM measurement for a time period, wherein the regular RRM measurement comprises one RRM measurement for each DRX cycle.~~

58. ~~The apparatus of claim 57, wherein the at least one processor is further configured to:~~
~~receive an indication of the time period from a base station via a broadcast system information.~~

~~59. A computer readable medium storing computer executable code for wireless communication at a User Equipment (UE), comprising code to:~~

~~—— enter a relaxed Radio Resource Management (RRM) measurement with a first cell, wherein the relaxed RRM measurement comprises a single RRM measurement for more than one DRX cycle;~~

~~reselect to a second cell that supports the relaxed RRM measurement; and~~

~~return to a regular RRM measurement for a time period, wherein the regular RRM measurement comprises one RRM measurement for each DRX cycle.~~

~~60. The computer readable medium of claim 59, further comprising code to:~~

~~receive an indication of the time period from a base station via a broadcast system information.~~

~~61. A method of wireless communication at a User Equipment (UE), comprising:~~

~~—— entering a discontinuous reception (DRX) mode or an extended discontinuous reception (eDRX) mode, the DRX mode or the eDRX mode comprising a wake up signal (WUS) mode with a first cell;~~

~~—— reselecting to a second cell that supports the WUS mode; and~~

~~—— returning to the DRX mode or the eDRX mode without the WUS mode for a time period after the reselecting to the second cell.~~

~~62. The method of claim 61, wherein the time period is based on an indication received from a base station via a broadcast system information.~~

~~63. The method of claim 61, wherein the time period is based on a predefined minimum duration.~~

~~64. The method of claim 63, wherein the time period is determined based on parameters of a WUS configuration received from a network entity for the UE.~~

65. — The method of claim 64, wherein the time period is based on a Mobility Management Entity (MME) latency requirement and a duration of a previous WUS detection.

66. — The method of claim 61, wherein the time period is determined based on parameters of a WUS configuration received from a base station for the UE.

67. — The method of claim 61, wherein the time period is determined based on a predefined lookup table based on a WUS configuration.

68. — The method of claim 64, wherein the time period is based on a number of DRX cycles after the UE reselects to the second cell.

69. — The method of claim 68, wherein the WUS mode comprises a WUS for each DRX cycle, and the time period comprises at least two DRX cycles, and
wherein after the at least two DRX cycles, the UE returns to the WUS mode.

70. — The method of claim 68, wherein the WUS mode comprises a single WUS for N specified number of multiple DRX cycles, and the time period corresponds to N DRX cycles.

71. — The method of claim 68, wherein the WUS mode comprises a single WUS for N multiple DRX cycles, and the eDRX mode comprises a relaxed Radio Resource Management (RRM) measurement having a single RRM measurement for every M DRX cycles, and
wherein the time period comprises $N - M_0$ DRX cycles, where M_0 refers to the RRM measurement at which the UE reselects to the second cell.

72. — An apparatus for wireless communication at a User Equipment (UE), comprising:
means for entering a discontinuous reception (DRX) mode or an extended discontinuous reception (eDRX) mode, the DRX mode or the eDRX mode comprising a wake up signal (WUS) mode with a first cell;
— means for reselecting to a second cell that supports the WUS mode; and

~~— means for returning to the DRX mode or the eDRX mode without the WUS mode for a time period after the reselecting to the second cell.~~

73. ~~The apparatus of claim 72, further comprising:~~

~~means for receiving an indication of the time period from a base station via a broadcast system information, wherein the time period is based on a predefined minimum duration.~~

74. ~~The apparatus of claim 72, further comprising:~~

~~means for receiving an indication of the time period based on parameters of a WUS configuration received from a base station.~~

75. ~~The apparatus of claim 72, further comprising:~~

~~means for receiving an indication of the time period based on a predefined lookup table based on a WUS configuration.~~

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

~~a memory; and~~

~~at least one processor coupled to the memory and configured to:~~

~~enter a discontinuous reception (DRX) mode or an extended discontinuous reception (eDRX) mode, the DRX mode or the eDRX mode comprising a wake up signal (WUS) mode with a first cell;~~

~~reselect to a second cell that supports the WUS mode; and~~

~~— return to the DRX mode or the eDRX mode without the WUS mode for a time period after the reselecting to the second cell.~~

77. ~~The apparatus of claim 76, wherein the at least one processor is further configured to:~~

~~receive an indication of the time period from a base station via a broadcast system information, wherein the time period is based on a predefined minimum duration.~~

78. ~~The apparatus of claim 76, wherein the at least one processor is further configured to:~~

~~receive an indication of the time period based on parameters of a WUS configuration received from a base station.~~

79. ~~The apparatus of claim 76, wherein the at least one processor is further configured to:
receive an indication of the time period based on a predefined lookup table based on a WUS configuration.~~

80. ~~A computer readable medium storing computer executable code for wireless communication at a User Equipment (UE), comprising code to:
enter a discontinuous reception (DRX) mode or an extended discontinuous reception (eDRX) mode, the DRX mode or the eDRX mode comprising a wake-up signal (WUS) mode with a first cell;~~

~~reselect to a second cell that supports the WUS mode; and
return to the DRX mode or the eDRX mode without the WUS mode for a time period after the reselecting to the second cell.~~

81. ~~The computer readable medium of claim 80, further comprising code to:
receive an indication of the time period from a base station via a broadcast system information, wherein the time period is based on a predefined minimum duration.~~

82. ~~The computer readable medium of claim 80, further comprising code to:
receive an indication of the time period based on parameters of a WUS configuration received from a base station.~~

83. ~~The computer readable medium of claim 80, further comprising code to:
receive an indication of the time period based on a predefined lookup table based on a WUS configuration.~~

paging occasions.