

CLAIMS

1. A method of wireless communication performed by a network device, comprising:
 - providing, to a base station, information identifying a set of wakeup signal (WUS) sub-groups for wakeup signaling by the base station, wherein the information identifying the set of WUS sub-groups identifies a mapping of a set of base station-level WUS sub-groups to a set of network device-level WUS sub-groups;
 - receiving an indication that a user equipment (UE) supports WUS sub-grouping;
 - providing, to the UE and based at least in part on receiving the indication that the UE supports WUS sub-grouping, information identifying an assignment of the UE to a WUS sub-group of the set of WUS sub-groups; and
 - providing, to the base station, an indication that the WUS sub-group to which the UE is assigned is to receive a WUS based at least in part on the assignment and on paging to be performed for the UE.
2. The method of claim 1, wherein the set of network device-level WUS sub-groups is different than the set of base station-level WUS sub-groups.
3. The method of claim 1, wherein the indication, that the WUS sub-group is to receive the WUS, identifies a base station-level WUS sub-group of the set of base station-level WUS sub-groups.
4. The method of claim 1, wherein the indication, that the WUS sub-group is to receive the WUS, identifies a network device-level WUS sub-group of the set of network device-level WUS sub-groups.
5. The method of claim 1, wherein the assignment indicates a base station-level WUS sub-group of the set of base station-level WUS sub-groups.
6. The method of claim 1, wherein the assignment indicates a network device-level WUS sub-group of the set of network device-level WUS sub-groups.

7. The method of claim 1, wherein information, identifying the mapping of the set of base station-level WUS sub-groups to the set of network device-level WUS sub-groups, is provided to the UE.
8. The method of claim 1, wherein the indication that the UE supports WUS sub-grouping is received in an attach request message or a tracking area update request message.
9. The method of claim 1, wherein the information identifying the assignment is provided in an attach accept message or a tracking area update accept message.
10. The method of claim 1, further comprising:
 - determining the assignment of the UE to the WUS sub-group.
11. The method of claim 10, wherein determining the assignment of the UE to the WUS sub-group is based at least in part on a frequency of occurrence of paging associated with the UE.
12. The method of claim 1, wherein the set of WUS sub-groups correspond to a plurality of WUS occasions.
13. A method of wireless communication performed by a base station, comprising:
 - receiving, from a network device, information identifying a set of wakeup signal (WUS) sub-groups for wakeup signaling by the base station, wherein the information identifying the set of WUS sub-groups identifies a mapping of a set of base station-level WUS sub-groups to a set of network device-level WUS sub-groups;
 - receiving an indication that a WUS sub-group, of the set of WUS sub-groups, associated with a user equipment (UE) is to receive a WUS based at least in part on paging to be performed for the UE, wherein the WUS sub-group is a network device-level WUS sub-group that is mapped to two or more base station-level WUS sub-groups; and

transmitting the WUS on a WUS occasion associated with a selected base station-level WUS sub-group of the two or more base station-level WUS sub-groups in accordance with the mapping.

14. The method of claim 13, further comprising:

providing, to the UE, system information identifying the set of WUS sub-groups.

15. The method of claim 14, wherein the system information identifies the mapping of the set of base station-level WUS sub-groups to the set of network device-level WUS sub-groups.

16. The method of claim 14, wherein the system information indicates an assignment of the UE to the WUS sub-group.

17. The method of claim 13, wherein the indication that the WUS sub-group associated with the UE is to receive the WUS includes information identifying the UE.

18. The method of claim 13, wherein the indication that the WUS sub-group associated with the UE is to receive the WUS includes information identifying the network device-level WUS sub-group.

19. The method of claim 13, further comprising:

performing the paging on a paging occasion associated with the WUS sub-group.

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

providing, for a network device, an indication that the UE supports wakeup signal (WUS) sub-grouping;

receiving, based at least in part on the indication, information identifying an assignment of the UE to a WUS sub-group of a set of WUS sub-groups, wherein the WUS sub-group is a network device-level WUS sub-group that is associated with a mapping to a base station-level WUS sub-group; and

receiving a WUS on a WUS occasion associated with the base station-level WUS sub-group based at least in part on the mapping.

21. The method of claim 20, further comprising:

receiving system information identifying the set of WUS sub-groups or the assignment.

22. The method of claim 20, wherein the WUS sub-group is included in a set of base station-level WUS sub-groups.

23. The method of claim 20, wherein the WUS sub-group is included in a set of network device-level WUS sub-groups.

24. The method of claim 20, wherein the WUS sub-group is included in a plurality of base station-level WUS sub-groups associated with a plurality of network device-level WUS sub-groups, and wherein the WUS sub-group is selected based at least in part on an identifier of the UE.

25. The method of claim 20, wherein the indication that the UE supports WUS sub-grouping is provided in a registration message or a registration update message.

26. The method of claim 20, wherein the information identifying the assignment is received in an attach accept message or a tracking area update accept message.

27. A network device for wireless communication, comprising:

a memory; and

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

provide, to a base station, information identifying a set of wakeup signal (WUS) sub-groups for wakeup signaling by the base station, wherein the information identifying the set of WUS sub-groups identifies a mapping of a set of base station-level WUS sub-groups to a set of network device-level WUS sub-groups;

receive an indication that a user equipment (UE) supports WUS sub-grouping;
provide, to the UE and based at least in part on receiving the indication that the UE supports WUS sub-grouping, information identifying an assignment of the UE to a WUS sub-group of the set of WUS sub-groups; and
provide, to the base station, an indication that the WUS sub-group to which the UE is assigned is to receive a WUS based at least in part on the assignment and on paging to be performed for the UE.

28. The network device of claim 27, wherein the set of network device-level WUS sub-groups is different than the set of base station-level WUS sub-groups.

29. The network device of claim 27, wherein the indication, that the WUS sub-group is to receive the WUS, identifies a base station-level WUS sub-group of the set of base station-level WUS sub-groups.

30. The network device of claim 27, wherein the indication, that the WUS sub-group is to receive the WUS, identifies a network device-level WUS sub-group of the set of network device-level WUS sub-groups.

31. The network device of claim 27, wherein the assignment indicates a base station-level WUS sub-group of the set of base station-level WUS sub-groups.

32. The network device of claim 27, wherein the assignment indicates a network device-level WUS sub-group of the set of network device-level WUS sub-groups.

33. The network device of claim 27, wherein information, identifying the mapping of the set of base station-level WUS sub-groups to the set of network device-level WUS sub-groups, is provided to the UE.

34. The network device of claim 27, wherein the indication that the UE supports WUS sub-grouping is received in an attach request message or a tracking area update request message.

35. The network device of claim 27, wherein the information identifying the assignment is provided in an attach accept message or a tracking area update accept message.

36. The network device of claim 27, wherein the one or more processors are further configured to:

determine the assignment of the UE to the WUS sub-group.

37. The network device of claim 36, wherein determining the assignment of the UE to the WUS sub-group is based at least in part on a frequency of occurrence of paging associated with the UE.

38. The network device of claim 27, wherein the set of WUS sub-groups correspond to a plurality of WUS occasions.

39. A base station for wireless communication, comprising:

a memory; and

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

receive, from a network device, information identifying a set of wakeup signal (WUS) sub-groups for wakeup signaling by the base station, wherein the information identifying the set of WUS sub-groups identifies a mapping of a set of base station-level WUS sub-groups to a set of network device-level WUS sub-groups;

receive an indication that a WUS sub-group, of the set of WUS sub-groups, associated with a user equipment (UE) is to receive a WUS based at least in part on paging to be performed for the UE, wherein the WUS sub-group is a network device-level WUS sub-group that is mapped to two or more base station-level WUS sub-groups; and

transmit the WUS on a WUS occasion associated with a selected base station-level WUS sub-group of the two or more base station-level WUS sub-groups in accordance with the mapping.

40. The base station of claim 39, wherein the one or more processors are further configured to:
provide, to the UE, system information identifying the set of WUS sub-groups.
41. The base station of claim 40, wherein the system information identifies the mapping of the
set of base station-level WUS sub-groups to the set of network device-level WUS sub-groups.
42. The base station of claim 40, wherein the system information indicates an assignment of the
UE to the WUS sub-group.
43. The base station of claim 39, wherein the indication that the WUS sub-group associated with
the UE is to receive the WUS includes information identifying the UE.
44. The base station of claim 39, wherein the indication that the WUS sub-group associated with
the UE is to receive the WUS includes information identifying the network device-level WUS
sub-group.
45. The base station of claim 39, wherein the one or more processors are further configured to:
perform the paging on a paging occasion associated with the WUS sub-group.
46. A user equipment (UE) for wireless communication, comprising:
a memory; and
one or more processors coupled to the memory, the memory and the one or more
processors configured to:
provide, for a network device, an indication that the UE supports wakeup signal (WUS)
sub-grouping;
receive, based at least in part on the indication, information identifying an assignment of
the UE to a WUS sub-group of a set of WUS sub-groups, wherein the WUS sub-group is a
network device-level WUS sub-group that is associated with a mapping to a base station-level
WUS sub-group; and
receive a WUS on a WUS occasion associated with the base station-level WUS sub-
group based at least in part on the mapping.

47. The UE of claim 46, wherein the one or more processors are further configured to:
receive system information identifying the set of WUS sub-groups or the assignment.
48. The UE of claim 46, wherein the WUS sub-group is included in a set of base station-level WUS sub-groups.
49. The UE of claim 46, wherein the WUS sub-group is included in a set of network device-level WUS sub-groups.
50. The UE of claim 46, wherein the WUS sub-group is included in a plurality of base station-level WUS sub-groups associated with a plurality of network device-level WUS sub-groups, and wherein the WUS sub-group is selected based at least in part on an identifier of the UE.
51. The UE of claim 46, wherein the indication that the UE supports WUS sub-grouping is provided in a registration message or a registration update message.
52. The UE of claim 46, wherein the information identifying the assignment is received in an attach accept message or a tracking area update accept message.
53. A non-transitory computer-readable medium storing a set of instructions for wireless communication, the set of instructions comprising:
one or more instructions that, when executed by one or more processors of a network device, cause the network device to:
provide, to a base station, information identifying a set of wakeup signal (WUS) sub-groups for wakeup signaling by the base station, wherein the information identifying the set of WUS sub-groups identifies a mapping of a set of base station-level WUS sub-groups to a set of network device-level WUS sub-groups;
receive an indication that a user equipment (UE) supports WUS sub-grouping;

provide, to the UE and based at least in part on receiving the indication that the UE supports WUS sub-grouping, information identifying an assignment of the UE to a WUS sub-group of the set of WUS sub-groups; and

provide, to the base station, an indication that the WUS sub-group to which the UE is assigned is to receive a WUS based at least in part on the assignment and on paging to be performed for the UE.

54. The non-transitory computer-readable medium of claim 53, wherein the set of network device-level WUS sub-groups is different than the set of base station-level WUS sub-groups.

55. The non-transitory computer-readable medium of claim 53, wherein the indication, that the WUS sub-group is to receive the WUS, identifies a base station-level WUS sub-group of the set of base station-level WUS sub-groups.

56. The non-transitory computer-readable medium of claim 53, wherein the indication, that the WUS sub-group is to receive the WUS, identifies a network device-level WUS sub-group of the set of network device-level WUS sub-groups.

57. The non-transitory computer-readable medium of claim 53, wherein the assignment indicates a base station-level WUS sub-group of the set of base station-level WUS sub-groups.

58. The non-transitory computer-readable medium of claim 53, wherein the assignment indicates a network device-level WUS sub-group of the set of network device-level WUS sub-groups.

59. The non-transitory computer-readable medium of claim 53, wherein information, identifying the mapping of the set of base station-level WUS sub-groups to the set of network device-level WUS sub-groups, is provided to the UE.

60. The non-transitory computer-readable medium of claim 53, wherein the indication that the UE supports WUS sub-grouping is received in an attach request message or a tracking area update request message.

61. The non-transitory computer-readable medium of claim 53, wherein the information identifying the assignment is provided in an attach accept message or a tracking area update accept message.

62. The non-transitory computer-readable medium of claim 53, wherein the one or more instructions further cause the network device to:

determine the assignment of the UE to the WUS sub-group.

63. The non-transitory computer-readable medium of claim 62, wherein determining the assignment of the UE to the WUS sub-group is based at least in part on a frequency of occurrence of paging associated with the UE.

64. The non-transitory computer-readable medium of claim 53, wherein the set of WUS sub-groups correspond to a plurality of WUS occasions.

65. A non-transitory computer-readable medium storing a set of instructions for wireless communication, the set of instructions comprising:

one or more instructions that, when executed by one or more processors of a base station, cause the base station to:

receive, from a network device, information identifying a set of wakeup signal (WUS) sub-groups for wakeup signaling by the base station, wherein the information identifying the set of WUS sub-groups identifies a mapping of a set of base station-level WUS sub-groups to a set of network device-level WUS sub-groups;

receive an indication that a WUS sub-group, of the set of WUS sub-groups, associated with a user equipment (UE) is to receive a WUS based at least in part on paging to be performed for the UE, wherein the WUS sub-group is a network device-level WUS sub-group that is mapped to two or more base station-level WUS sub-groups; and

transmit the WUS on a WUS occasion associated with a selected base station-level WUS sub-group of the two or more base station-level WUS sub-groups in accordance with the mapping.

66. The non-transitory computer-readable medium of claim 65, wherein the one or more instructions further cause the base station to:

provide, to the UE, system information identifying the set of WUS sub-groups.

67. The non-transitory computer-readable medium of claim 66, wherein the system information identifies the mapping of the set of base station-level WUS sub-groups to the set of network device-level WUS sub-groups.

68. The non-transitory computer-readable medium of claim 66, wherein the system information indicates an assignment of the UE to the WUS sub-group.

69. The non-transitory computer-readable medium of claim 65, wherein the indication that the WUS sub-group associated with the UE is to receive the WUS includes information identifying the UE.

70. The non-transitory computer-readable medium of claim 65, wherein the indication that the WUS sub-group associated with the UE is to receive the WUS includes information identifying the network device-level WUS sub-group.

71. The non-transitory computer-readable medium of claim 65, wherein the one or more instructions further cause the base station to:

perform the paging on a paging occasion associated with the WUS sub-group.

72. A non-transitory computer-readable medium storing one or more instructions for wireless communication, the one or more instructions comprising:

one or more instructions that, when executed by one or more processors of a user equipment (UE), cause the UE to:

provide, for a network device, an indication that the UE supports wakeup signal (WUS) sub-grouping;

receive, based at least in part on the indication, information identifying an assignment of the UE to a WUS sub-group of a set of WUS sub-groups, wherein the WUS sub-group is a network device-level WUS sub-group that is associated with a mapping to a base station-level WUS sub-group; and

receive a WUS on a WUS occasion associated with the base station-level WUS sub-group based at least in part on the mapping.

73. The non-transitory computer-readable medium of claim 72, wherein the one or more instructions further cause the UE to:

receive system information identifying the set of WUS sub-groups or the assignment.

74. The non-transitory computer-readable medium of claim 72, wherein the WUS sub-group is included in a set of base station-level WUS sub-groups.

75. The non-transitory computer-readable medium of claim 72, wherein the WUS sub-group is included in a set of network device-level WUS sub-groups.

76. The non-transitory computer-readable medium of claim 72, wherein the WUS sub-group is included in a plurality of base station-level WUS sub-groups associated with a plurality of network device-level WUS sub-groups, and wherein the WUS sub-group is selected based at least in part on an identifier of the UE.

77. The non-transitory computer-readable medium of claim 72, wherein the indication that the UE supports WUS sub-grouping is provided in a registration message or a registration update message.

78. The non-transitory computer-readable medium of claim 72, wherein the information identifying the assignment is received in an attach accept message or a tracking area update accept message.

79. An apparatus for wireless communication, comprising:

means for providing, to a base station, information identifying a set of wakeup signal (WUS) sub-groups for wakeup signaling by the base station, wherein the information identifying the set of WUS sub-groups identifies a mapping of a set of base station-level WUS sub-groups to a set of network device-level WUS sub-groups;

means for receiving an indication that a user equipment (UE) supports WUS sub-grouping;

means for providing, to the UE and based at least in part on receiving the indication that the UE supports WUS sub-grouping, information identifying an assignment of the UE to a WUS sub-group of the set of WUS sub-groups; and

means for providing, to the base station, an indication that the WUS sub-group to which the UE is assigned is to receive a WUS based at least in part on the assignment and on paging to be performed for the UE.

80. The apparatus of claim 79, wherein the set of network device-level WUS sub-groups is different than the set of base station-level WUS sub-groups.

81. The apparatus of claim 79, wherein the indication, that the WUS sub-group is to receive the WUS, identifies a base station-level WUS sub-group of the set of base station-level WUS sub-groups.

82. The apparatus of claim 79, wherein the indication, that the WUS sub-group is to receive the WUS, identifies a network device-level WUS sub-group of the set of network device-level WUS sub-groups.

83. The apparatus of claim 79, wherein the assignment indicates a base station-level WUS sub-group of the set of base station-level WUS sub-groups.

84. The apparatus of claim 79, wherein the assignment indicates a network device-level WUS sub-group of the set of network device-level WUS sub-groups.

85. The apparatus of claim 79, wherein information, identifying the mapping of the set of base station-level WUS sub-groups to the set of network device-level WUS sub-groups, is provided to the UE.

86. The apparatus of claim 79, wherein the indication that the UE supports WUS sub-grouping is received in an attach request message or a tracking area update request message.

87. The apparatus of claim 79, wherein the information identifying the assignment is provided in an attach accept message or a tracking area update accept message.

88. The apparatus of claim 79, further comprising:
means for determining the assignment of the UE to the WUS sub-group.

89. The apparatus of claim 88, wherein determining the assignment of the UE to the WUS sub-group is based at least in part on a frequency of occurrence of paging associated with the UE.

90. The apparatus of claim 79, wherein the set of WUS sub-groups correspond to a plurality of WUS occasions.

91. An apparatus for wireless communication, comprising:
means for receiving, from a network device, information identifying a set of wakeup signal (WUS) sub-groups for wakeup signaling by the apparatus, wherein the information identifying the set of WUS sub-groups identifies a mapping of a set of base station-level WUS sub-groups to a set of network device-level WUS sub-groups;
means for receiving an indication that a WUS sub-group, of the set of WUS sub-groups, associated with a user equipment (UE) is to receive a WUS based at least in part on paging to be performed for the UE, wherein the WUS sub-group is a network device-level WUS sub-group that is mapped to two or more base station-level WUS sub-groups; and
means for transmitting the WUS on a WUS occasion associated with a selected base station-level WUS sub-group of the two or more base station-level WUS sub-groups in accordance with the mapping.

92. The apparatus of claim 91, further comprising:

means for providing, to the UE, system information identifying the set of WUS sub-groups.

93. The apparatus of claim 92, wherein the system information identifies the mapping of the set of base station-level WUS sub-groups to the set of network device-level WUS sub-groups.

94. The apparatus of claim 92, wherein the system information indicates an assignment of the UE to the WUS sub-group.

95. The apparatus of claim 91, wherein the indication that the WUS sub-group associated with the UE is to receive the WUS includes information identifying the UE.

96. The apparatus of claim 91, wherein the indication that the WUS sub-group associated with the UE is to receive the WUS includes information identifying the network device-level WUS sub-group.

97. The apparatus of claim 91, further comprising:

means for performing the paging on a paging occasion associated with the WUS sub-group.

98. An apparatus for wireless communication, comprising:

means for providing, for a network device, an indication that the apparatus supports wakeup signal (WUS) sub-grouping;

means for receiving, based at least in part on the indication, information identifying an assignment of the apparatus to a WUS sub-group of a set of WUS sub-groups, wherein the WUS sub-group is a network device-level WUS sub-group that is associated with a mapping to a base station-level WUS sub-group; and

means for receiving a WUS on a WUS occasion associated with the base station-level WUS sub-group based at least in part on the mapping.

99. The apparatus of claim 98, further comprising:

means for receiving system information identifying the set of WUS sub-groups or the assignment.

100. The apparatus of claim 98, wherein the WUS sub-group is included in a set of base station-level WUS sub-groups.

101. The apparatus of claim 98, wherein the WUS sub-group is included in a set of network device-level WUS sub-groups.

102. The apparatus of claim 98, wherein the WUS sub-group is included in a plurality of base station-level WUS sub-groups associated with a plurality of network device-level WUS sub-groups, and wherein the WUS sub-group is selected based at least in part on an identifier of the apparatus.

103. The apparatus of claim 98, wherein the indication that the apparatus supports WUS sub-grouping is provided in a registration message or a registration update message.

104. The apparatus of claim 98, wherein the information identifying the assignment is received in an attach accept message or a tracking area update accept message.