~~CLAIMS~~

~~WHAT IS CLAIMED IS:~~

CLAIMS

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

transmitting a packet on a first resource;

determining a repetition resource on which to send a redundancy version of the packet, wherein the repetition resource is at a time subsequent to the first resource;

transmitting repetition resource information identifying the repetition resource to one or more neighboring UEs; and transmitting the redundancy version of the packet on the repetition resource.

~~transmitting the redundancy version of the packet on the repetition resource.~~

2. The method of claim 1, further comprising:

determining a set of one or more resources associated with a set of one or more received packets; and

wherein determining the repetition resource includes avoiding a time and/or frequency overlap with the set of one or more resources of the set of one or more received packets.

3. The method of claim 1, wherein determining the repetition resource includes randomly selecting the repetition resource.

4. The method of claim 1, wherein the transmitting of the repetition resource information comprises transmitting via a control channel.

5. The method of claim 1, further comprising:

receiving neighboring UE repetition resource information identifying a neighboring UE repetition resource to be used by a neighboring UE for transmitting a neighboring UE packet; and

wherein determining the repetition resource includes excluding the neighboring UE repetition resource from a set of available resources for the repetition resource.

6. The method of claim 1, wherein determining the repetition resource includes at least one of determining one or a plurality of time-based resources, or determining one or a plurality of time and frequency resources.

7. The method of claim 6, wherein a frequency of the one or the plurality of time and frequency resources comprises either a same frequency as the first resource for the transmitting of the redundancy version of the packet, or a matching frequency for at least two consecutive transmissions of the redundancy version of the packet, or a second frequency different from a first frequency of the first resource.

8. The method of claim 1, wherein determining the repetition resource includes selecting the repetition resource from a set of predefined resources.

9. The method of claim 8, further comprising:

wherein the set of predefined resources includes an available set of resources within a time window corresponding to a packet delay budget for the transmitting of the packet; and

selecting one of the available set of resources having an amount of resource collision within an acceptable collision threshold with respect to a non-available set of resources within the time window.

10. The method of claim 9, further comprising:

ranking sets of resources in the available set of resources in an increasing order of number of collisions; and

wherein the selecting of one of the available set of resources comprises randomly selecting from a subset of highest ranked ones of the sets of resources.

11. The method of claim 8, wherein a set of patterns of resources within the set of predefined resources depends on a required amount of resources for the transmitting of the redundancy version of the packet, or for the transmitting of the redundancy version of the packet and one or more additional transmissions of the redundancy version of the packet.

12.- The method of claim 11, wherein the required amount of resources comprises one or more of a number of resource blocks, a number of transmission time intervals (TTIs) per transmission of the redundancy version of the packet, or a number of repetitions of the transmission of the redundancy version of the packet.

13. The method of claim 11, further comprising selecting a pattern from the set of patterns of resources based on a random selection, a UE identifier of the UE, a location of the UE, or a network configured selection parameter.

14. The method of claim 11, further comprising:

determining that none of the set of patterns of resources correspond to an available set of resources within a first time window corresponding to a packet delay budget for the transmitting of the packet; and

selecting a pattern from the set of patterns of resources having an amount of resource collision within an acceptable collision threshold with respect to a non-available set of resources in the first time window.

15. The method of claim 14, further comprising:

ranking each of the sets of patterns of resources in an increasing order of number of collisions; and

wherein the selecting of the pattern from the set of patterns of resources comprises randomly selecting from a subset of highest ranked ones of the sets of patterns of resources.

16. The method of claim 11, further comprising:

determining that none of the set of patterns of resources correspond to an available set of resources within a first time window corresponding to a packet delay budget for the transmitting of the packet; and

selecting a pattern from the set of patterns of resources within a second time window after the first time window.

17. The method of claim 1, further comprising:

determining a number of repetitions of transmissions of the redundancy version of the packet;

wherein the determining of the repetition resource further comprises determining a set of repetition resources for the number of repetitions, wherein each of the set of repetition resources is at a different time and is subsequent to the first resource;

wherein the transmitting of the repetition resource information further includes identifying the set of repetition resources for the number of repetitions; and

wherein the transmitting of the redundancy version of the packet further comprises transmitting on each of the set of repetition resources.

18. The method of claim 1, further comprising:

determining a number of repetitions of transmissions of the redundancy version of the packet, wherein the number of repetitions is greater than 2;

wherein the determining of the repetition resource further comprises determining a first set of repetition resources for a one or two of the number of repetitions, wherein each of the first set of repetition resources is at a different time and is subsequent to the first resource;

wherein the transmitting of the repetition resource information further includes identifying the first set of repetition resources for the one or two of the number of repetitions; and

wherein the transmitting of the redundancy version of the packet further comprises transmitting at least one of the one or two of the number of repetitions on at least a portion of the first set of repetition resources.

19. The method of claim 18, wherein an inter-repetition gap between two consecutive ones of the number of transmissions is between a minimum gap value and a maximum gap value.

20. The method of claim 18, wherein a minimum gap value and a maximum gap value are functions of a packet delay tolerance of the packet, a congestion level of transmissions in a vicinity of the UE, or both.

21. The method of claim 18, further comprising:

wherein the transmitting on each of the first set of repetition resources comprises transmitting at least a first redundancy version of the packet on at least a first subset of the first set of repetition resources;

determining a change in available resources;

determining a second set of repetition resources for at least a next one of the number of repetitions based on the change in the available resources;

transmitting updated repetition resource information identifying the second set of repetition resources for at least the next one of the number of repetitions; and

wherein the transmitting of the redundancy version of the packet further comprises transmitting at least the next one of the number of repetitions on the second set of repetition resources.

22. The method of claim 21, wherein determining the second set of repetition resources for the next one of the number of repetitions further comprises changing, relative to the first set of repetition resources, at least one of a number of resource blocks or a number of repetitions per transmission time interval (TTI).

23. The method of claim 1, further comprising:

receiving a non-acknowledged (NACK) signal corresponding to the transmitting of the packet on the first resource; and

wherein the determining of the repetition resource, the transmitting of the repetition resource information, and the transmitting of the redundancy version of the packet are all in response to the NACK signal.

24. The method of claim 1, further comprising:

receiving neighboring UE repetition resource information identifying a neighboring UE repetition resource to be used by a neighboring UE for transmitting a first neighboring UE packet;

determining whether a NACK signal was received for a second neighboring UE packet corresponding to the first neighboring UE packet;

wherein determining the repetition resource includes excluding the neighboring UE repetition resource from a set of available resources for the repetition resource based on determining that the NACK signal was received for the second neighboring UE packet; and

wherein determining the repetition resource includes including the neighboring UE repetition resource in a set of available resources for the repetition resource based on determining that the NACK signal was not received for the second neighboring UE packet.

25. A non-transitory computer-readable medium of a UE, the computer-readable medium storing computer executable code comprising code to:

transmit a packet on a first resource;

determine a repetition resource on which to send a redundancy version of the packet, wherein the repetition resource is at a time subsequent to the first resource;

transmit repetition resource information identifying the repetition resource to one or more neighboring UEs; and transmit the redundancy version of the packet on the repetition resource.

~~transmit the redundancy version of the packet on the repetition resource.~~

26. The non-transitory computer-readable medium of claim 25, further comprising code to:

receive a non-acknowledged (NACK) signal corresponding to the transmitting of the packet on the first resource; and

wherein the determining of the repetition resource, the transmitting of the repetition resource information, and the transmitting of the redundancy version of the packet are all in response to the NACK signal.

27. The non-transitory computer-readable medium of claim 25, further comprising code to: determine a set of one or more resources associated with a set of one or more received packets; and wherein code to determine the repetition resource includes code to avoid a time and/or frequency overlap with the set of one or more resources of the set of one or more received packets.

28. The non-transitory computer-readable medium of claim 25, wherein the code to determine the repetition resource includes code to randomly select the repetition resource.

29. The non-transitory computer-readable medium of claim 25, wherein the code to transmit of the repetition resource information comprises code to transmit via a control channel.

30. The non-transitory computer-readable medium of claim 25, further comprising code to: receive neighboring UE repetition resource information identifying a neighboring UE repetition resource to be used by a neighboring UE for transmitting a neighboring UE packet; and wherein code to determine the repetition resource includes code to exclude the neighboring UE repetition resource from a set of available resources for the repetition resource.

31. The non-transitory computer-readable medium of claim 25, wherein the code to determine the repetition resource includes code to at least one of determine one or a plurality of time-based resources, or determine one or a plurality of time and frequency resources.

32. The non-transitory computer-readable medium of claim 31, wherein a frequency of the one or the plurality of time and frequency resources comprises either a same frequency as the first resource for the transmitting of the redundancy version of the packet, or a matching frequency for at least two consecutive transmissions of the redundancy version of the packet, or a second frequency different from a first frequency of the first resource.

33. The non-transitory computer-readable medium of claim 25, wherein the code to determine the repetition resource includes code to select the repetition resource from a set of predefined resources.

34. The non-transitory computer-readable medium of claim 33, wherein a set of patterns of resources within the set of predefined resources depends on a required amount of resources for the transmitting of the redundancy version of the packet, or for the transmitting of the redundancy version of the packet and one or more additional transmissions of the redundancy version of the packet.

35. The non-transitory computer-readable medium of claim 34, wherein the required amount of resources comprises one or more of a number of resource blocks, a number of transmission time intervals (TTIs) per transmission of the redundancy version of the packet, or a number of repetitions of the transmission of the redundancy version of the packet.

36. The non-transitory computer-readable medium of claim 34, further comprising code to select a pattern from the set of patterns of resources based on a random selection, a UE identifier of the UE, a location of the UE, or a network configured selection parameter.

37. The non-transitory computer-readable medium of claim 34, further comprising code to: determine that none of the set of patterns of resources correspond to an available set of resources within a first time window corresponding to a packet delay budget for the transmitting of the packet; and select a pattern from the set of patterns of resources having an amount of resource collision within an acceptable collision threshold with respect to a non-available set of resources in the first time window.

38. The non-transitory computer-readable medium of claim 25, further comprising code to: determine a number of repetitions of transmissions of the redundancy version of the packet; wherein the code to determine of the repetition resource further comprises code to determine a set of repetition resources for the number of repetitions, wherein each of the set of repetition resources is at a different time and is subsequent to the first resource; wherein the code to transmit the repetition resource information further includes code to identify the set of repetition resources for the number of repetitions; and wherein the code to transmit the redundancy version of the packet further comprises code to transmit on each of the set of repetition resources.

39. The non-transitory computer-readable medium of claim 25, further comprising code to: determine a number of repetitions of transmissions of the redundancy version of the packet, wherein the number of repetitions is greater than **2**; wherein the code to determine of the repetition resource further comprises code to determine a first set of repetition resources for a one or two of the number of repetitions, wherein each of the first set of repetition resources is at a different time and is subsequent to the first resource; wherein the code to transmit the repetition resource information further includes code to identify the first set of repetition resources for the one or two of the number of repetitions; and wherein the code to transmit the redundancy version of the packet further comprises code to transmit at least one of the

one or two of the number of repetitions on at least a portion of the first set of repetition resources.

~~27.~~40. A user equipment (UE) for wireless communication, comprising:

a memory; and

a processor in communication with the memory, wherein the processor is configured to:

transmit a packet on a first resource;

determine a repetition resource on which to send a redundancy version of the packet, wherein the repetition resource is at a time subsequent to the first resource;

transmit repetition resource information identifying the repetition resource to one or more neighboring UEs; and transmit the redundancy version of the packet on the repetition resource.

~~transmit the redundancy version of the packet on the repetition resource.~~

~~28.~~ 41. The UE of claim ~~27~~40, wherein the processor is further configured to:

receive a non-acknowledged (NACK) signal corresponding to the transmitting of the packet on the first resource; and

wherein the determining of the repetition resource, the transmitting of the repetition resource information, and the transmitting of the redundancy version of the packet are all in response to the NACK signal.

42. The UE of claim 40, wherein the processor is configured further to: determine a set of one or more resources associated with a set of one or more received packets; and wherein determining the repetition resource includes avoiding a time and/or frequency overlap with the set of one or more resources of the set of one or more received packets.

43. The UE of claim 40, wherein determining the repetition resource includes randomly selecting the repetition resource.

44. The UE of claim 40, wherein the transmitting of the repetition resource information comprises transmitting via a control channel.

45. The UE of claim 40, wherein the processor is configured further to: receive neighboring UE repetition resource information identifying a neighboring UE repetition resource to be used by a neighboring UE for transmitting a neighboring UE packet; and wherein determining the repetition resource includes excluding the neighboring UE repetition resource from a set of available resources for the repetition resource.

46. The UE of claim 40, wherein determining the repetition resource includes at least one of determining one or a plurality of time-based resources, or determining one or a plurality of time and frequency resources.

47. The UE of claim 46, wherein a frequency of the one or the plurality of time and frequency resources comprises either a same frequency as the first resource for the transmitting of the

redundancy version of the packet, or a matching frequency for at least two consecutive transmissions of the redundancy version of the packet, or a second frequency different from a first frequency of the first resource.

48. The UE of claim 40, wherein determining the repetition resource includes selecting the repetition resource from a set of predefined resources.

49. The UE of claim 48, wherein the processor is configured further to: wherein the set of predefined resources includes an available set of resources within a time window corresponding to a packet delay budget for the transmitting of the packet; and select one of the available set of resources having an amount of resource collision within an acceptable collision threshold with respect to a non-available set of resources within the time window.

50. The UE of claim 49, wherein the processor is configured further to: rank sets of resources in the available set of resources in an increasing order of number of collisions; and wherein the selecting of one of the available set of resources comprises randomly selecting from a subset of highest ranked ones of the sets of resources.

51. The UE of claim 48, wherein a set of patterns of resources within the set of predefined resources depends on a required amount of resources for the transmitting of the redundancy version of the packet, or for the transmitting of the redundancy version of the packet and one or more additional transmissions of the redundancy version of the packet.

52. The UE of claim 51, wherein the required amount of resources comprises one or more of a number of resource blocks, a number of transmission time intervals (TTIs) per transmission of the redundancy version of the packet, or a number of repetitions of the transmission of the redundancy version of the packet.

53. The UE of claim 51, wherein the processor is configured further to select a pattern from the set of patterns of resources based on a random selection, a UE identifier of the UE, a location of the UE, or a network configured selection parameter.

54. The UE of claim 51, wherein the processor is configured further to: determine that none of the set of patterns of resources correspond to an available set of resources within a first time window corresponding to a packet delay budget for the transmitting of the packet; and select a pattern from the set of patterns of resources having an amount of resource collision within an acceptable collision threshold with respect to a non-available set of resources in the first time window.

55. The UE of claim 54, wherein the processor is configured further to: rank each of the sets of patterns of resources in an increasing order of number of collisions; and wherein the selecting of the pattern from the set of patterns of resources comprises randomly selecting from a subset of highest ranked ones of the sets of patterns of resources.

56. The UE of claim 51, wherein the processor is configured further to: determine that none of the set of patterns of resources correspond to an available set of resources within a first time window corresponding to a packet delay budget for the transmitting of the packet; and select a pattern from the set of patterns of resources within a second time window after the first time window.

57. The UE of claim 40, wherein the processor is configured further to: determine a number of repetitions of transmissions of the redundancy version of the packet; wherein the determining of the repetition resource further comprises determining a set of repetition resources for the number of repetitions, wherein each of the set of repetition resources is at a different time and is subsequent to the first resource; wherein the transmitting of the repetition resource information further includes identifying the set of repetition resources for the number of repetitions; and wherein the transmitting of the redundancy version of the packet further comprises transmitting on each of the set of repetition resources.

58. The UE of claim 40, wherein the processor is configured further to: determine a number of repetitions of transmissions of the redundancy version of the packet, wherein the number of repetitions is greater than **2**; wherein the determining of the repetition resource further comprises determining a first set of repetition resources for a one or two of the number of repetitions, wherein each of the first set of repetition resources is at a different time and is subsequent to the first resource; wherein the transmitting of the repetition resource information further includes identifying the first set of repetition resources for the one or two of the number of repetitions; and wherein the transmitting of the redundancy version of the packet further comprises transmitting at least one of the one or two of the number of repetitions on at least a portion of the first set of repetition resources.

59. The UE of claim 58, wherein an inter-repetition gap between two consecutive ones of the number of transmissions is between a minimum gap value and a maximum gap value.

60. The UE of claim 58, wherein a minimum gap value and a maximum gap value are functions of a packet delay tolerance of the packet, a congestion level of transmissions in a vicinity of the UE, or both.

61. The UE of claim 58, wherein the processor is configured further to: wherein the transmitting on each of the first set of repetition resources comprises transmitting at least a first redundancy version of the packet on at least a first subset of the first set of repetition resources; determine a change in available resources; determine a second set of repetition resources for at least a next one of the number of repetitions based on the change in the available resources; transmit updated repetition resource information identifying the second set of repetition resources for at least the next one of the number of repetitions; and wherein the transmitting of the redundancy version of the packet further comprises transmitting at least the next one of the number of repetitions on the second set of repetition resources.

62. The UE of claim 61, wherein determining the second set of repetition resources for the next one of the number of repetitions further comprises changing, relative to the first set of repetition resources, at least one of a number of resource blocks or a number of repetitions per transmission time interval (TTI).

63. The UE of claim 40, wherein the processor is configured further to: receive neighboring UE repetition resource information identifying a neighboring UE repetition resource to be used by a neighboring UE for transmitting a first neighboring UE packet; determine whether a NACK signal was received for a second neighboring UE packet corresponding to the first neighboring UE packet; wherein determining the repetition resource includes excluding the neighboring UE repetition resource from a set of available resources for the repetition resource based on determining that the NACK signal was received for the second neighboring UE packet; and wherein determining the repetition resource includes including the neighboring UE repetition resource in a set of available resources for the repetition

resource based on determining that the NACK signal was not received for the second neighboring UE packet.

~~29.~~64. A user equipment (UE), comprising:

means for transmitting a packet on a first resource;

means for determining a repetition resource on which to send a redundancy version of the packet, wherein the repetition resource is at a time subsequent to the first resource;

means for transmitting repetition resource information identifying the repetition resource to one or more neighboring UEs; and transmitting the redundancy version of the packet on the repetition resource.

~~transmitting the redundancy version of the packet on the repetition resource.~~

~~30.~~ 65. The UE of claim ~~29~~64, further comprising:

means for receiving a non-acknowledged (NACK) signal corresponding to the transmitting of the packet on the first resource; and

wherein the determining of the repetition resource, the transmitting of the repetition resource information, and the transmitting of the redundancy version of the packet are all in response to the NACK signal.

66. The UE of claim 64, further comprising: means for determine a set of one or more resources associated with a set of one or more received packets; and wherein means for determining the repetition resource includes means for avoiding a time and/or frequency overlap with the set of one or more resources of the set of one or more received packets.

67. The UE of claim 64, wherein means for determining the repetition resource includes means for randomly selecting the repetition resource.

68. The UE of claim 64, wherein the means for transmitting of the repetition resource information comprises means for transmitting via a control channel.

69. The UE of claim 64, further comprising: means for receiving neighboring UE repetition resource information identifying a neighboring UE repetition resource to be used by a neighboring UE for transmitting a neighboring UE packet; and wherein means for determining the repetition resource includes means for excluding the neighboring UE repetition resource from a set of available resources for the repetition resource.

70. The UE of claim 64, wherein the code to determine the repetition resource includes code to at least one of determine one or a plurality of time-based resources, or determine one or a plurality of time and frequency resources.

71. The UE of claim 70, wherein a frequency of the one or the plurality of time and frequency resources comprises either a same frequency as the first resource for the transmitting of the redundancy version of the packet, or a matching frequency for at least two consecutive transmissions of the redundancy version of the packet, or a second frequency different from a first frequency of the first resource.

72. The UE of claim 64, wherein the means for determining the repetition resource includes means for selecting the repetition resource from a set of predefined resources.

73. The UE of claim 72, wherein a set of patterns of resources within the set of predefined resources depends on a required amount of resources for the transmitting of the redundancy version of the packet, or for the transmitting of the redundancy version of the packet and one or more additional transmissions of the redundancy version of the packet.

74. The UE of claim 73, wherein the required amount of resources comprises one or more of a number of resource blocks, a number of transmission time intervals (TTIs) per transmission of the redundancy version of the packet, or a number of repetitions of the transmission of the redundancy version of the packet.

75. The UE of claim 73, further comprising means for selecting a pattern from the set of patterns of resources based on a random selection, a UE identifier of the UE, a location of the UE, or a network configured selection parameter.

76. The UE of claim 73, further comprising: means for determining that none of the set of patterns of resources correspond to an available set of resources within a first time window corresponding to a packet delay budget for the transmitting of the packet; and means for selecting a pattern from the set of patterns of resources having an amount of resource collision within an acceptable collision threshold with respect to a non-available set of resources in the first time window.

77. The UE of claim 64, further comprising: means for determining a number of repetitions of transmissions of the redundancy version of the packet; wherein means for determining of the repetition resource further comprises means for determining a set of repetition resources for the number of repetitions, wherein each of the set of repetition resources is at a different time and is subsequent to the first resource; wherein means for transmitting the repetition resource information further includes means for identifying the set of repetition resources for the number of repetitions; and wherein means for transmitting the redundancy version of the packet further comprises means for transmitting on each of the set of repetition resources.

78. The UE of claim 64, further comprising: means for determining a number of repetitions of transmissions of the redundancy version of the packet, wherein the number of repetitions is greater than **2**; wherein means for determining of the repetition resource further comprises means for determining a first set of repetition resources for a one or two of the number of repetitions, wherein each of the first set of repetition resources is at a different time and is subsequent to the first resource; wherein means for transmitting the repetition resource information further includes means for identifying the first set of repetition resources for the one or two of the number of repetitions; and wherein means for transmitting the redundancy version of the packet further comprises means for transmitting at least one of the one or two of the number of repetitions on at least a portion of the first set of repetition resources.