

WHAT IS CLAIMED IS:

CLAIMS

1. A method of wireless communication performed by a user equipment (UE), comprising:
 - _determining whether a physical uplink control channel (PUCCH) transmission is associated with a first type of service or a second type of service, wherein the second type of service is associated with a higher reliability or a lower latency than the first type of service; and
 - _transmitting the PUCCH transmission based at least in part on a first set of resources when the PUCCH transmission is associated with the first type of service or based at least in part on a second set of resources when the PUCCH transmission is associated with the second type of service, wherein the PUCCH transmission is determined based on a downlink assignment index (DAI) field included in downlink control information (DCI), and wherein a first bitwidth of the DAI field for the first type of service is different than a second bitwidth of the DAI field for the second type of service.
2. The method of claim 1, wherein the first type of service comprises an enhanced mobile broadband (eMBB) service and the second type of service comprises an ultra-reliable, low-latency communication (URLLC) service.
3. The method of claim 1, wherein the first set of resources includes multiple resource sets configured for the first type of service.
4. The method of claim 1, wherein the second set of resources includes multiple resource sets configured for the second type of service.
5. The method of claim 1, wherein the PUCCH transmission comprises at least one of:
 - _hybrid automatic repeat request acknowledgement (HARQ-ACK) information,
 - _a service request (SR), or
 - _a channel state information (CSI) report.
6. The method of claim 5, wherein the ACK/NACK is associated with dynamic scheduling or semi-persistent scheduling (SPS).
7. The method of claim 1, wherein the first set of resources includes four resource sets, and wherein the second set of resources includes fewer than four resource sets.
8. The method of claim 1, wherein the first set of resources is different than the second set of resources.

9. The method of claim 1, wherein a number of resource sets in the second set of resources is less than a number of resource sets in the first set of resources.

10. The method of claim 1, wherein at least one resource set of the first set of resources is a same resource set as a resource set included in the second set of resources.

11. The method of claim 1, wherein a number of resources within each set of the second set of resources is less than a number of resources within each set of the first set of resources.

12. The method of claim 1, wherein the UE is configured to determine a number of resources within each set of the first set of resources or the second set of resources based at least in part on a bitwidth of a PUCCH resource indicator field in ~~downlink control information (DCI)~~DCI received from a base station in association with the PUCCH transmission.

13. The method of claim 1, wherein the PUCCH transmission is transmitted over two or more resources of the second set of resources based at least in part on a determination that the PUCCH transmission is associated with the second type of service.

14. The method of claim 1, wherein the PUCCH transmission is transmitted via at least two transmit antennas on two resources of the second set of resources based at least in part on a determination that the PUCCH transmission is associated with the second type of service.

15. The method of claim 1, wherein at least two resources of one set of the second set of resources share a same identifier and the PUCCH transmission is transmitted using the at least two resources when the same identifier is received in association with the PUCCH transmission.

16. The method of claim 1, wherein the PUCCH transmission is transmitted using one or more resources of the second set of resources based at least in part on receiving, from a base station, an index and a semi-statically received configuration in association with the PUCCH transmission.

17. The method of claim 1, wherein resources of the second set of resources are identified for use in connection with the PUCCH transmission differently than resources of the first set of resources.

18. The method of claim 17, wherein the resources of the second set of resources are identified for use in connection with the PUCCH transmission differently than the resources of the first set of resources in connection with using a different PUCCH format.

19. The method of claim 1, wherein a resource of the first set of resources is identified for use in association with the first type of service based at least in part on a first value of a parameter associated with the resource of the first set of resources or a resource of the second set of resources is identified for use in association with the second type of service based at least in part on a second value of the parameter associated with the resource of the second set of resources.

20. The method of claim 1, wherein, for a resource of the PUCCH transmission, a parameter indicates whether the resource is associated with the first type of service, the second type of service, or both the first type of service and the second type of service based at least in part on a value of the parameter.

21. The method of claim 20, wherein the parameter is included within a configuration of the resource for the PUCCH transmission.

22. The method of claim 20, wherein the value of the parameter indicates that a same resource of the first set of resources and the second set of resources is associated with the first type of service and the second type of service.

23. The method of claim 1, wherein the first set of resources is a same set of resources as the second set of resources, and wherein each resource of the same set of resources is associated with a first identifier for the PUCCH transmission when the PUCCH transmission is associated with the first type of service and a second identifier for the PUCCH transmission when the PUCCH transmission is associated with the second type of service.

24. The method of claim 23, wherein the PUCCH transmission is transmitted using one of the same set of resources based at least in part on receiving downlink control information that indicates an index associated with the first type of service or the second type of service.

25. The method of claim 1, wherein a starting symbol parameter identifies a different starting symbol when the PUCCH transmission is associated with the first type of service than when the PUCCH transmission is associated with the second type of service.

26. The method of claim 25, wherein the starting symbol parameter when the PUCCH transmission is associated with the first type of service identifies a relative index with a slot for the PUCCH transmission.

27. The method of claim 25, wherein the starting symbol parameter when the PUCCH transmission is associated with the second type of service identifies a timing associated with signaling in ~~downlink control information (DCI)~~ DCI.

28. The method of claim 1, wherein hybrid automatic repeat request acknowledgement (HARQ-ACK) information in the PUCCH transmission is determined according to a first ~~downlink assignment index (DAI)~~ DAI operation when the PUCCH transmission is associated with the first type of service and the HARQ-ACK information in the PUCCH transmission is determined according to a second DAI operation when the PUCCH transmission is associated with the second type of service.

29. The method of claim 1, wherein, when the PUCCH transmission is a first PUCCH transmission associated with the first type of service, and a second PUCCH transmission associated with the second type of service is to be transmitted on using symbols that overlap with the symbols of the first PUCCH transmission, the symbols that overlap are dropped from the first PUCCH transmission.

30. A method of wireless communication performed by a base station (BS), comprising:

 _determining a first configuration of physical uplink control channel (PUCCH) resources to be used for PUCCH transmissions associated with a first type of service;

 _determining a second configuration of PUCCH resources to be used for PUCCH transmissions associated with a second type of service, wherein the second type of service is associated with a higher reliability or a lower latency than the first type of service; ~~and~~ transmitting the first configuration and the second configuration to a user equipment (UE); and transmitting downlink control information (DCI) that includes a downlink assignment index (DAI) field associated with a PUCCH transmission, wherein a first bitwidth of the DAI field for the first type of service is different than a second bitwidth of the DAI field for the second type of service.

~~transmitting the first configuration and the second configuration to a user equipment (UE).~~

31. The method of claim 30, wherein the first type of service comprises an enhanced mobile broadband (eMBB) service and the second type of service comprises an ultra-reliable, low-latency communication (URLLC) service.

32. The method of claim 30, wherein the first configuration is different from the second configuration.

33. The method of claim 30, wherein sets of PUCCH resources included in the first configuration are different than sets of PUCCH resources included in the second configuration.

34. The method of claim 30, wherein the second configuration includes fewer sets of PUCCH resources than the first configuration.

35. The method of claim 30, wherein a number of PUCCH resources in each set of PUCCH resources included in the second configuration is less than a number of PUCCH resources in each set of PUCCH resources included in the first configuration.

36. The method of claim 30, wherein a bitwidth of a PUCCH resource indicator in ~~downlink control information (DCI)~~ corresponds to the second type of service according to a number of PUCCH resources in each set of PUCCH resources included in the second configuration.

37. The method of claim 30, wherein, for each PUCCH resource of the first configuration and the second configuration, a parameter indicates whether the PUCCH resource is associated with the first type of service, the second type of service, or both the first type of service and the second type of service.

38. The method of claim 30, wherein a first set of resources of the first configuration is a same set of resources as a second set of resources of the second configuration, and wherein each resource of the same set of resources is associated with a first identifier for a PUCCH transmission when the PUCCH transmission is associated with the first type of service and a second identifier for the PUCCH transmission when the PUCCH transmission is associated with the second type of service.

39. The method of claim 30, wherein the first configuration is one of a first plurality of configurations of PUCCH resources to be used for PUCCH transmissions associated with the first type.

40. The method of claim 30, wherein a maximum coding rate of the first configuration is different than a maximum coding rate of the second configuration.

41. A ~~method of user equipment (UE) for wireless communication performed by a user equipment (UE),~~ comprising:
receiving a ~~physical uplink control channel (PUCCH) configuration comprising a first set of parameters for transmissions associated with a first service type and a second set of parameters for transmissions associated with a second service type;~~
generating uplink control information (UCI); and
transmitting a message that includes the UCI according to the PUCCH configuration and a service type of the message.

~~42. The method of claim 41, wherein the service type of the message is determined based at least in part on downlink control information (DCI) received from a base station.~~

~~43. The method of claim 41, wherein a maximum coding rate indicated by the first set of parameters is different than a maximum coding rate indicated by the second set of parameters.~~

44. A user equipment (UE) for wireless communication, comprising:
memory; and

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

determine whether a physical uplink control channel (PUCCH) transmission is associated with a first type of service or a second type of service, wherein the second type of service is associated with a higher reliability or a lower latency than the first type of service; and

transmit the PUCCH transmission using a first set of resources when the PUCCH transmission is associated with the first type of service or using a second set of resources when the PUCCH transmission is associated with the second type of service, wherein the PUCCH transmission is determined based on a downlink assignment index (DAI) field included in downlink control information (DCI), and wherein a first bitwidth of the DAI field for the first type of service is different than a second bitwidth of the DAI field for the second type of service.

42. The UE of claim 41, wherein a bitwidth of the DAI field is based on a type of service associated with the PUCCH transmission.

43. A method of wireless communication performed by a base station (BS), comprising: determining a first configuration of physical uplink control channel (PUCCH) resources to be used for PUCCH transmissions associated with a first type of service; determining a second configuration of PUCCH resources to be used for PUCCH transmissions associated with a second type of service, wherein the second type of service is associated with a higher reliability or a lower latency than the first type of service; transmitting the first configuration and the second configuration to a user equipment (UE); and transmitting downlink control information (DCI) that includes a downlink assignment index (DAI) field associated with a PUCCH transmission, wherein a first bitwidth of the DAI field for the first type of service is different than a second bitwidth of the DAI field for the second type of service.

44. The method of claim 1, wherein a bitwidth of the DAI field is based on a type of service associated with the PUCCH transmission.