CLAIMS

1. A method of wireless communications at a user equipment (UE), comprising: receiving, from a base station, a radio resource channel (RRC) configuration indicating multiple UE-specific uplink control information (UCI) resource sets, wherein each UE-specific UCI resource set of the multiple UE-specific UCI resource sets is different from each remaining UE-specific UCI resource set of the multiple UE-specific UCI resource sets; determining, at the UE, a size of a payload for a UCI to be transmitted on a physical uplink control channel (PUCCH); and determining, at the UE, a selected UE-specific UCI resource set from the multiple UE-specific resource sets for transmitting the UCI on the PUCCH based, at least in part, on the size of the payload of the UCI.

2. The method of claim 1, further comprising: receiving, from the base station, a physical downlink control channel (PDCCH) including a corresponding acknowledgement (ACK)/non-acknowledgement (NACK) resource configuration, wherein determining the selected UE-specific UCI resource set further comprises determining a UE-specific UCI resource of the selected UE-specific UCI resource set based, at least in part, on the ACK/NACK resource configuration.

3. The method of claim 2, wherein the ACK/NACK resource configuration includes an acknowledgement resource indicator (ARI), and wherein the UCI comprises at least an ACK or a NACK.

4. The method of claim 3, wherein determining the selected UE-specific resource set is further based, at least in part, on cross-slot scheduling information and a last PDCCH of multiple PDCCHs of different slots.

5. The method of claim 2, wherein receiving the PDCCH includes receiving the PDCCH having one of a plurality of different format types, wherein each of the plurality of different format types corresponds to a different subset of the multiple UE-specific resource sets, and wherein determining the selected UE-specific UCI resource set further comprises selecting from a subset of the multiple UE-specific resource sets corresponding to the one of the plurality of different format types.

6. The method of claim 1, wherein determining the selected UE-specific UCI resource set further comprises: identifying, at the UE, a payload size range for each of the multiple UE-specific resource sets; identifying which of the payload size ranges include the size of the payload for the UCI; and selecting the selected UE-specific UCI resource set from one the multiple UE-specific resource sets identified as having a corresponding payload size range that includes the size of the payload of the UCI.

7. The method of claim 6, further comprising selecting one or more resources within the selected UE-specific UCI resource set based on implicit mapping.

8. The method of claim 6, further comprising selecting one or more resources within the selected UE-specific UCI resource set based on explicit mapping.

9. The method of claim 8, further comprising: receiving an acknowledgement resource indicator (ARI); and mapping to the one or more resources within the selected UE-specific UCI resource set based on the ARI.

10. The method of claim 6, further comprising selecting one or more resources within the selected UE-specific UCI resource set based on a combination of implicit mapping and explicit mapping.

11. The method of claim 1, further comprising: receiving an acknowledgement resource indicator (ARI); and selecting one or more resources within the selected UE-specific UCI resource set based on the ARI.

12. The method of claim 11, wherein the ARI includes a resource index, and wherein the method further comprises selecting a sub-band associated with the one or more resources based on the resource index.

13. The method of claim 1, further comprising: receiving an acknowledgement resource indicator (ARI); and selecting, based on the ARI, a first group of one or more resources within the selected UE-specific UCI resource set for same-slot scheduling or a second group of one or more resources within the selected UE-specific UCI resource set for cross-slot scheduling.

14. The method of claim 1, further comprising: receiving an acknowledgement resource indicator (ARI); and selecting, based on implicit mapping, a first group of one or more resources within the selected UE-specific UCI resource set for same-slot scheduling or a second group of one or more resources within the selected UE-specific UCI resource set for cross-slot scheduling.

15. The method of claim 1, further comprising transmitting the UCI via the selected UE-specific UCI resource set on the PUCCH.

16. A user equipment (UE), comprising: a transceiver; a memory; a processor coupled with the transceiver and the memory and configured to: receive, from a base station, a radio resource channel (RRC) configuration indicating multiple UE-specific uplink control information (UCI) resource sets, wherein each UE-specific UCI resource set of the multiple UE-specific UCI resource sets is different from each remaining UE-specific UCI resource set of the multiple UE-specific UCI resource sets; determine a size of a payload for a UCI to be transmitted on a physical uplink control channel (PUCCH); and determine a selected UE-specific UCI resource set from the multiple UE-specific resource sets for transmitting the UCI on the PUCCH based, at least in part, on the size of the payload of the UCI.

17. The UE of claim 16, wherein the processor is further configured to: receive, from the base station, a physical downlink control channel (PDCCH) including a corresponding acknowledgement (ACK)/non-acknowledgement (NACK) resource configuration; and determine a UE-specific UCI resource of the selected UE-specific UCI resource set based, at least in part, on the ACK/NACK resource configuration.

18. The UE of claim 17, wherein the ACK/NACK resource configuration includes an acknowledgement resource indicator (ARI), and wherein the UCI comprises an ACK or a NACK.

19. The UE of claim 18, wherein the processor is further configured to determine the selected UE-specific resource set further based, at least in part, on cross-slot scheduling information and a last PDCCH of multiple PDCCHs of different slots.

20. The UE of claim 17, wherein the processor is further configured to: receive the PDCCH by receiving the PDCCH having one of a plurality of different format types, wherein each of the plurality of different format types corresponds to a different subset of the multiple UE-specific resource sets; and select from a subset of the multiple UE-specific resource sets corresponding to the one of the plurality of different format types; and determine the selected UE-specific UCI resource set further based on the subset.

21. The UE of claim 16, wherein the processor is further configured to determine the selected UE-specific UCI resource set by: identifying a payload size range for each of the multiple UE-specific resource sets; identifying which of the payload size ranges include the size of the payload for the UCI; and selecting the selected UE-specific UCI resource set from one the multiple UE-specific resource sets identified as having a corresponding payload size range that includes the size of the payload of the UCI.

22. The UE of claim 21, wherein the processor is further configured to select one or more resources within the selected UE-specific UCI resource set based on implicit mapping.

23. The UE of claim 21, wherein the processor is further configured to select one or more resources within the selected UE-specific UCI resource set based on explicit mapping.

24. The UE of claim 23, wherein the processor is further configured to: receive an acknowledgement resource indicator (ARI); and map to the one or more resources within the selected UE-specific UCI resource set based on the ARI.

25. The UE of claim 21, wherein the processor is further configured to select one or more resources within the selected UE-specific UCI resource set based on a combination of implicit mapping and explicit mapping.

26. The UE of claim 16, wherein the processor is further configured to: receive an acknowledgement resource indicator (ARI); and select one or more resources within the selected UE-specific UCI resource set based on the ARI.

27. The UE of claim 26, wherein the ARI includes a resource index, and wherein the processor is further configured to select a sub-band associated with the one or more resources based on the resource index.

28. The UE of claim 16, wherein the processor is further configured to: receive an acknowledgement resource indicator (ARI); and select, based on the ARI, a first group of one or more resources within the selected UE-specific UCI resource set for same-slot scheduling or a second group of one or more resources within the selected UE-specific UCI resource set for cross-slot scheduling.

29. The UE of claim 16, wherein the processor is further configured to: receive an acknowledgement resource indicator (ARI); and select, based on implicit mapping, a first group of one or more resources within the selected UE-specific UCI resource set for same-slot scheduling or a second group of one or more resources within the selected UE-specific UCI resource set for cross-slot scheduling.

30. The UE of claim 16, further comprising transmitting the UCI via the selected UE-specific UCI resource set on the PUCCH.

31. A user equipment (UE), comprising: means for receiving, from a base station, a radio resource channel (RRC) configuration indicating multiple UE-specific uplink control information (UCI) resource sets, wherein each UE-specific UCI resource set of the multiple UE-specific UCI resource sets is different from each remaining UE-specific UCI resource set of the multiple UE-specific UCI resource sets; means for determining a size of a payload for a UCI to be transmitted on a physical uplink control channel (PUCCH); and means for determining a selected UE-specific UCI resource set from the multiple UE-specific resource sets for transmitting the UCI on the PUCCH based, at least in part, on the size of the payload of the UCI.

32. The UE of claim 31, further comprising: means for receiving, from the base station, a physical downlink control channel (PDCCH) including a corresponding acknowledgement (ACK)/non-acknowledgement (NACK) resource configuration, wherein the means for determining the selected UE-specific UCI resource set

determines a UE-specific UCI resource of the selected UE-specific UCI resource set based, at least in part, on the ACK/NACK resource configuration.

33. A non-transitory computer readable medium having processor-executable program code stored thereon, comprising: code for receiving, from a base station, a radio resource channel (RRC) configuration indicating multiple UE-specific uplink control information (UCI) resource sets, wherein each UE-specific UCI resource set of the multiple UE-specific UCI resource sets is different from each remaining UE-specific UCI resource set of the multiple UE-specific UCI resource sets; code for determining a size of a payload for a UCI to be transmitted on a physical uplink control channel (PUCCH); and code for determining a selected UE-specific UCI resource set from the multiple UE-specific resource sets for transmitting the UCI on the PUCCH based, at least in part, on the size of the payload of the UCI.

34. The non-transitory computer readable medium of claim 33, further comprising: code for receiving, from the base station, a physical downlink control channel (PDCCH) including a corresponding acknowledgement (ACK)/non-acknowledgement (NACK) resource configuration; and code for determining a UE-specific UCI resource of the selected UE-specific UCI resource set based, at least in part, on the ACK/NACK resource configuration.

35. A method of wireless communication at a base station, comprising: transmitting, to a UE, a radio resource channel (RRC) configuration indicating multiple UE-specific uplink control information (UCI) resource sets, wherein each UE-specific UCI resource set of the multiple UE-specific UCI resource sets is different from each remaining UE-specific UCI resource set of the multiple UE-specific UCI resource sets; and receiving, from the UE based on the RRC configuration, a UCI in a UE-specific UCI resource set selected by the UE from the multiple UE-specific UCI resource sets based on a payload size of the UCI.

36. The method of claim 35, further comprising: transmitting, from the base station, a physical downlink control channel (PDCCH) including a corresponding acknowledgement (ACK) / non-acknowledgement (NACK) resource configuration.

37. The method of claim 36, wherein the PDCCH includes one of a plurality of different format types, wherein each of the plurality of different format types corresponds to a different subset of the multiple UE-specific resource sets.

38. A base station, comprising: a transceiver; a memory; a processor coupled with the transceiver and the memory and configured to: transmit, to a UE, a radio resource channel (RRC) configuration indicating multiple UE-specific uplink control information (UCI) resource sets, wherein each UE-specific UCI resource set of the multiple UE-specific UCI resource sets is different from each remaining UE-specific UCI resource set of the multiple UE-specific UCI resource sets; and receive, from the UE based on the RRC configuration being transmitted, a UCI in a UE-specific UCI resource set selected by the UE from the multiple UE-specific UCI resource sets based on a payload size of the UCI.

39. The base station of claim 38, wherein the processor is further configured to: transmit, from the base station, a physical downlink control channel (PDCCH) including a corresponding acknowledgement (ACK)/non-acknowledgement (NACK) resource configuration.

40. The base station of claim 39, wherein the PDCCH includes one of a plurality of different format types, wherein each of the plurality of different format types corresponds to a different subset of the multiple UE-specific resource sets.

41. A non-transitory computer readable medium having processor-executable program code stored thereon, comprising: code executable to transmit, to a UE, a radio resource channel (RRC) configuration indicating multiple UE-specific uplink control information (UCI) resource sets, wherein each UE-specific UCI resource set of the multiple UE-specific UCI resource sets is different from each remaining UE-specific UCI resource set of the multiple UE-specific UCI resource sets; and code executable to receive, from the UE based on the RRC configuration being transmitted, a UCI in a UE-specific UCI resource set selected by the UE from the multiple UE-specific UCI resource sets based on a payload size of the UCI.

42. A base station, comprising: means for transmitting, to a UE, a radio resource channel (RRC) configuration indicating multiple UE-specific uplink control information (UCI) resource sets, wherein each UE-specific UCI resource set of the multiple UE-specific UCI resource sets is different from each remaining UE-specific UCI resource set of the multiple UE-specific UCI resource sets; and means for receiving, from the UE based on the RRC configuration being transmitted, a UCI in a UE-specific UCI resource set selected by the UE from the multiple UE-specific UCI resource sets based on a payload size of the UCI.