

CLAIMS

1. A method for wireless communications by a user equipment (UE), comprising:
determining resources allocated for providing one or more uplink control information (UCI) bits, comprising:
determining a first resource pool based on a mapping that maps different numbers of UCI bits to different resource pools, wherein the mapping maps a number of the one or more UCI bits to the first resource pool, and wherein the allocated resources comprise one or more resources of the first resource pool; and
sending, to a base station, a physical uplink control channel (PUCCH) with the one or more UCI bits using the allocated resources.
2. The method of claim 1, wherein the one or more UCI bits comprise at least one of one or more acknowledgement bits to acknowledge downlink transmission to the UE, scheduling request (SR), a buffer status report (BSR), or a channel quality indicator (CQI).
3. The method of claim 1, wherein the resources are dynamically allocated.
4. The method of claim 1, wherein the resources are semi-statically allocated.
5. The method of claim 1, wherein the one or more UCI bits comprise one or more acknowledgement bits to acknowledge downlink transmission to the UE and one or more channel quality indicator (CQI) bits.
6. The method of claim 5, wherein the allocated resources comprise resources allocated for providing the one or more acknowledgement bits and the one or more CQI bits.
7. The method of claim 5, wherein resources allocated for providing the one or more acknowledgment bits are different from resources allocated for the one or more CQI bits.
8. The method of claim 7, wherein the resources allocated for the one or more CQI bits are semi-statically allocated.
9. The method of claim 7, wherein the resources for the one or more acknowledgement bits are dynamically allocated.

10. The method of claim 7, further comprising determining to use the resources allocated for the one or more CQI bits for sending the one or more acknowledgment bits and the one or more CQI bits.
11. The method of claim 7, further comprising determining to use the resources allocated for providing the one or more acknowledgment bits for sending the one or more acknowledgment bits and the one or more CQI bits.
12. The method of claim 5, wherein the one or more acknowledgement bits are jointly encoded with the one or more of CQI bits.
13. The method of claim 5, wherein the one or more acknowledgement bits and the one or more CQI bits are separately encoded.
14. The method of claim 5, wherein the one or more acknowledgement bits are jointly encoded with a first part of the one or more CQI bits and separately encoded with a second part of the one or more CQI bits.
15. The method of claim 1, wherein the one or more UCI bits comprise one or more acknowledgement bits to acknowledge downlink transmission to the UE and buffer status report (BSR) bits.
16. The method of claim 15, wherein the allocated resources comprise resources allocated for the one or more acknowledgement bits and the BSR bits.
17. The method of claim 15, wherein resources allocated for providing the one or more acknowledgment bits are different from resources allocated for the BSR bits.
18. The method of claim 15, wherein the resources allocated for the BSR bits are semi-statically allocated.
19. The method of claim 15, further comprising deciding, based on a number of the one or more acknowledgment bits, whether to use the resources allocated for the BSR bits or other resources for transmitting the one or more acknowledgment bits.

20. The method of claim 1, wherein the one or more acknowledgment bits are jointly encoded with buffer status report (BSR) information.
21. The method of claim 1, wherein the one or more UCI bits comprise one or more acknowledgement bits to acknowledge downlink transmission to the UE and one or more scheduling request (SR) bits.
22. The method of claim 21, wherein the one or more SR bits and the one or more acknowledgment bits are jointly encoded and transmitted using resources allocated for the one or more acknowledgment bits.
23. The method of claim 22, wherein a number of the one or more acknowledgment bits is greater than 2.
24. The method of claim 21, wherein the resources allocated for the one or more SR bits are semi-statically allocated.
25. The method of claim 1, wherein the one or more UCI bits comprise one or more acknowledgement bits to acknowledge a downlink transmission to the UE.
26. The method of claim 25, wherein:
resources selected for uplink transmissions indicates a value of one or more of the one or more acknowledgment bits.
27. The method of claim 25, wherein the determination is based on a mapping between resources of a downlink transmission to resources available for sending the one or more acknowledgement bits.
28. The method of claim 27, wherein the mapping is subband dependent, such that same starting CCEs in different sub-bands are mapped to different resource pools.
29. An apparatus for wireless communications, comprising:
means for determining resources allocated for providing one or more uplink control information (UCI) bits, comprising:

means for determining a first resource pool based on a mapping that maps different numbers of UCI bits to different resource pools, wherein the mapping maps a number of the one or more UCI bits to the first resource pool, and wherein the allocated resources comprise one or more resources of the first resource pool; and

means for sending, to a base station, a physical uplink control channel (PUCCH) with the one or more UCI bits using the allocated resources.

30. A non-transitory computer readable medium having instructions stored thereon that, when executed by a user equipment (UE), cause the UE to perform a method comprising:

determining resources allocated for providing one or more uplink control information (UCI) bits, comprising:

determining a first resource pool based on a mapping that maps different numbers of UCI bits to different resource pools, wherein the mapping maps a number of the one or more UCI bits to the first resource pool, and wherein the allocated resources comprise one or more resources of the first resource pool; and

sending, to a base station, a physical uplink control channel (PUCCH) with the one or more UCI bits using the allocated resources.