

WHAT IS CLAIMED IS:

CLAIMS

1. A method of wireless communication performed by a user equipment (UE), comprising:
 - receiving a single downlink control information (DCI) message; and
 - mapping a bit sequence in the single DCI message to a configuration set that includes multiple downlink semi-persistent scheduling (SPS) configurations ~~or multiple uplink configured grant (CG) configurations to be jointly activated or to be jointly released~~; and transmitting, through a physical uplink control channel (PUCCH) resource, a codebook that includes an acknowledgement bit based at least in part on the bit sequence indicating that one or more of the multiple downlink SPS configurations are to be jointly released, wherein the acknowledgement bit is an individual acknowledgement bit used to acknowledge another one of the multiple downlink SPS configurations that was released.
2. The method of claim 1, wherein mapping the bit sequence in the single DCI message to the configuration set includes:
 - identifying, based at least in part on the bit sequence, a codepoint that indicates an index associated with an individual configuration to be ~~activated or~~ released; and
 - jointly ~~activating or~~ releasing each configuration in the configuration set based at least in part on determining that the individual configuration to be ~~activated or~~ released is a member of the configuration set.
3. The method of claim 2, wherein the index is a hybrid automatic repeat request (HARQ) index associated with the individual configuration to be ~~activated or~~ released.
4. The method of claim 2, wherein each configuration in the configuration set is associated with a particular service type.
5. The method of claim 1, wherein mapping the bit sequence in the single DCI message to the configuration set includes:
 - identifying, based at least in part on the bit sequence, an individual bit that corresponds to the configuration set; and
 - jointly ~~activating or~~ releasing each configuration in the configuration set based at least in part on the individual bit that corresponds to the configuration set indicating that the configuration set is to be ~~activated or~~ released.

6. The method of claim 5, wherein the configuration set is a first configuration set, wherein the individual bit is a first individual bit, and wherein the method further comprises:

~~identifying, based at least in part on the bit sequence in the single DCI message, a second individual bit that corresponds to a second configuration set; and~~
~~jointly activating or releasing each configuration in the second configuration set based at least in part on the second individual bit indicating that the second configuration set is to be activated or released.~~

7. The method of claim 5, wherein each configuration in the configuration set is associated with one or more of a particular service type or a particular parameter.

8. The method of claim 5, wherein a length of the bit sequence corresponds to a quantity of different configuration sets associated with the UE.

9. The method of claim 5, wherein at least one configuration in the configuration set is a member of one or more additional configuration sets, and wherein the at least one configuration is ~~activated or released~~ based at least in part on the bit sequence in the single DCI message indicating that the configuration set and the one or more additional configuration sets are all to be ~~activated or released~~.

10. The method of claim 1, wherein the UE is associated with multiple Configured Scheduling Radio Network Temporary Identifiers (CS-RNTIs) that respectively correspond to multiple configuration sets with one or more downlink semi-persistent scheduling (SPS) configurations or uplink CG configurations that can be jointly ~~activated or released~~.

11. The method of claim 1, wherein the bit sequence is provided in a hybrid automatic repeat request (HARQ) process number field of the DCI message.

12. The method of claim 1, wherein the multiple downlink SPS ~~configurations or multiple uplink CG configurations~~ are grouped within the configuration set based at least in part on an indicator in a radio resource control (RRC) configuration message.

13. The method of claim 1, wherein a length of the bit sequence is less than or equal to a length of a field in the DCI message used to separately activate or release an individual downlink SPS configuration or an individual uplink CG configuration.

14. The method of claim 1, ~~further comprising:~~

~~transmitting, through a physical uplink control channel (PUCCH) resource, a codebook that includes an individual acknowledgement bit based at least in part on the bit sequence indicating that the multiple downlink SPS configurations are to be jointly released.~~

15. ~~The method of claim 14,~~ wherein the PUCCH resource used to transmit the codebook is determined based at least in part on the single DCI message.

~~16~~15. The method of claim ~~14~~1, wherein the PUCCH resource used to transmit the codebook is indicated by a PUCCH resource indicator in a most recent DCI message, and wherein a location of the ~~individual~~ acknowledgement bit in the codebook is determined based at least in part on the single DCI message.

~~17~~16. The method of claim ~~14~~1, wherein a location of the ~~individual~~ acknowledgement bit in the codebook corresponds to a physical downlink shared channel (PDSCH) reception occasion associated with an individual downlink SPS configuration that corresponds to a codepoint indicated in the bit sequence.

~~18~~17. The method of claim ~~14~~1, wherein a location of the ~~individual~~ acknowledgement bit in the codebook corresponds to a physical downlink shared channel (PDSCH) reception occasion associated with an initial downlink SPS configuration in a first set of downlink SPS configurations that the bit sequence indicates is to be jointly released.

~~19~~18. The method of claim ~~14~~1, wherein the codebook further includes a negative acknowledgement for one or more physical downlink shared channel (PDSCH) reception occasions that correspond to one or more of the multiple downlink SPS configurations to be jointly released.

~~20~~19. The method of claim 1, ~~further comprising:~~wherein the bit sequence includes a bit sequence with 4 bits.

~~transmitting, through a medium access control (MAC) control element, an~~20. The method of claim 1, wherein the individual acknowledgement bit used is to acknowledge all of the single DCI message based at least in part on the bit sequence indicating that the multiple uplink CG~~downlink SPS configurations are to be jointly activated or that were released.~~

21. The method of claim 1, wherein the MAC control element further indicates an index corresponding to an acknowledged uplink CG configuration and indicates whether the codebook is a Type-1 hybrid automatic repeat request-acknowledgement is for a joint activation or (HARQ-ACK) codebook.

22. The method of claim 1, wherein a ~~joint release~~ location of the acknowledgement bit in the codebook corresponds to a physical downlink shared channel (PDSCH) reception occasion associated with the other one of the multiple downlink SPS configurations.

~~21. The method of claim 20, wherein the acknowledgement includes a bitmap with a set of bits to jointly acknowledge all of the multiple uplink CG configurations that are to be jointly activated or released.~~

~~22~~23. A user equipment (UE) for wireless communication, comprising:

~~_a memory; and~~

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

~~_receive a single downlink control information (DCI) message; and~~

~~map a bit sequence in the single DCI message to a configuration set that includes multiple downlink semi-persistent scheduling (SPS) configurations or multiple uplink configured grant configurations to be jointly activated or to be jointly released; and transmit, through a physical uplink control channel (PUCCH) resource, a codebook that includes an acknowledgement bit based at least in part on the bit sequence indicating that one or more of the multiple downlink SPS configurations are to be jointly released, wherein the acknowledgement bit is an individual acknowledgement bit used to acknowledge another one of the multiple downlink SPS configurations that was released.~~

~~23~~24. The UE of claim ~~22~~23, wherein ~~the memory and the one or more processors~~, when mapping the bit sequence in the single DCI message to the configuration set, are further configured to:

~~_identify, based at least in part on the bit sequence, a codepoint that indicates an index associated with an individual configuration to be activated or released; and~~

~~_jointly activate or release each configuration in the configuration set based at least in part on determining that the individual configuration to be activated or released is a member of the configuration set.~~

25. The UE of claim 24. ~~The UE of claim 23~~, wherein the index is a hybrid automatic repeat request (HARQ) index associated with the individual configuration to be ~~activated or~~ released.

~~25~~26. The UE of claim ~~22~~23, wherein ~~the memory and the one or more processors~~, when mapping the bit sequence in the single DCI message to the configuration set, are further configured to:

identify, based at least in part on the bit sequence, an individual bit that corresponds to the configuration set; and

jointly activate or release each configuration in the configuration set based at least in part on the individual bit that corresponds to the configuration set indicating that the configuration set is to be activated or released.

2627. The UE of claim 2223, wherein the bit sequence is provided in a hybrid automatic repeat request (HARQ) process number field of the DCI message.

2728. The UE of claim 2223, wherein the ~~memory and the one or more processors are further configured to:~~

~~transmit, through a physical uplink control channel (PUCCH) resource, a codebook that includes an individual acknowledgement bit based at least in part on the bit sequence indicating that~~used is to acknowledge all of the multiple downlink SPS configurations are to be jointly~~that were released.~~

2829. The UE of claim 2223, wherein the ~~memory and the one or more processors are further configured to:~~

~~transmit, through a medium access control (MAC) control element, an~~codebook is a Type-1 hybrid automatic repeat request-acknowledgement of the single DCI message based at least in part on the bit sequence indicating that the multiple uplink CG configurations are to be jointly activated or released, wherein the MAC control element further indicates an index corresponding to an acknowledged uplink CG configuration and indicates whether the acknowledgement is for a joint activation or a joint release~~(HARQ-ACK) codebook.~~

30. The UE of claim 23, wherein a location of the acknowledgement bit in the codebook corresponds to a physical downlink shared channel (PDSCH) reception occasion associated with the other one of the multiple downlink SPS configurations.

2931. 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, cause the one or more processors to:

receive a single downlink control information (DCI) message; and map a bit sequence in the single DCI message to a configuration set that includes multiple downlink semi-persistent scheduling configurations or multiple uplink configured grant configurations to be jointly activated or (SPS) configurations to be jointly released; and transmit, through a physical uplink control channel (PUCCH) resource, a codebook that includes an acknowledgement bit based at least in part on the bit sequence indicating that one or more of the multiple downlink SPS configurations are to be jointly released, wherein the

acknowledgement bit is an individual acknowledgement bit used to acknowledge another one of the multiple downlink SPS configurations that was released.

32. The non-transitory computer-readable medium of claim 31, wherein the individual acknowledgement bit used is to acknowledge all of the multiple downlink SPS configurations that were released.

3033. An apparatus for wireless communication, comprising:

means for receiving a single downlink control information (DCI) message; and
means for mapping a bit sequence in the single DCI message to a configuration set that includes multiple downlink semi-persistent scheduling configurations or multiple uplink configured grant configurations to be jointly activated or released; (SPS) configurations to be jointly released; and means for transmitting, through a physical uplink control channel (PUCCH) resource, a codebook that includes an acknowledgement bit based at least in part on the bit sequence indicating that one or more of the multiple downlink SPS configurations are to be jointly released, wherein the acknowledgement bit is an individual acknowledgement bit used to acknowledge another one of the multiple downlink SPS configurations that was released.