CLAIMS

1. A method of wireless communication of a base station, comprising: receiving, from a user equipment (UE), a first acknowledgement (ACK)/negative ACK (NACK) (ACK/NACK) feedback indicating that a subset of codeblock groups (CBGs) of a set of transmitted CBGs corresponding to a first transport block (TB) failed to be properly decoded; transmitting, based on the first ACK/NACK feedback, in a same resource allocation, a retransmission of the subset of CBGs corresponding to the first TB and a transmission of new data corresponding to a second TB; transmitting a downlink control information (DCI) message comprising information indicating the subset of CBGs that is being retransmitted, wherein the information comprises a CBG-level bitmap that explicitly indicates, in the DCI message, a CBG index for each of the subset of CBGs that is being retransmitted; and receiving, from the UE, a second ACK/NACK feedback indicating feedback for the first TB and the second TB that are associated with different hybrid automatic repeat request (HARQ) processes in the same resource allocation, the second ACK/NACK feedback comprising a CBG-level ACK/NACK indicating whether at least one retransmitted CBG corresponding to the first TB failed to be properly decoded and a TB-level ACK/NACK indicating whether the second TB is properly decoded and does not require retransmission.

2. The method of claim 1, wherein the subset of CBGs of the first TB and the new data of the second TB are transmitted in respective portions of a subframe.

3. The method of claim 2, wherein the subset of CBGs is retransmitted in a first mini-slot corresponding to a first set of symbols in the subframe, and at least a portion of the second TB is transmitted in a second mini-slot corresponding to a second set of symbols in the subframe.

4. The method of claim 2, wherein the first TB, comprising the subset of CBGs that are retransmitted, is associated with a first HARQ process and the second TB, comprising the new data, is associated with a second HARQ process different than the first HARQ process.

5. The method of claim 1, wherein the DCI message further indicates at least one of a slot boundary between the first TB corresponding to the subset of CBGs that is retransmitted and the second TB corresponding to the new data, or a modulation and coding scheme (MCS) associated with the new data.

6. The method of claim 1, wherein the first TB and the second TB are transmitted via a first multiple-input multiple-output (MIMO) transmission, the first TB and the second TB being associated with a first HARQ process, the first ACK/NACK feedback being received in response to the first MIMO transmission, and wherein the subset of CBGs is associated with the first HARQ process and is retransmitted via a second MIMO transmission in a subframe along with the new data corresponding to the second TB associated with a second HARQ process.

7. The method of claim 1, wherein a size of a CBG is configurable based on a size of a transport block to which the CBG corresponds.

8. The method of claim 1, wherein a number of codeblocks (CBs) in each CBG of the set of transmitted CBGs is different than a number CBs in each CBG of the subset of CBGs being retransmitted.

9. An apparatus for wireless communication, comprising: at least one processor coupled to a memory and configured to: receive, from a user equipment (UE), a first acknowledgement (ACK)/negative ACK (NACK) (ACK/NACK) feedback indicating that a subset of codeblock groups (CBGs) of a set of transmitted CBGs for a first transport block (TB) failed to be properly decoded; transmit, based on the first ACK/NACK feedback, in a same resource allocation, a retransmission of the subset of CBGs of the first TB and a transmission of new data of a second TB; transmit a downlink control information (DCI) message comprising information indicating the subset of CBGs that is being retransmitted, wherein the information comprises a CBG-level bitmap that explicitly indicates, in the DCI message, a CBG index for each of the subset of CBGs that is being retransmitted; and receive, from the UE, a second ACK/NACK feedback indicating feedback for the first TB and the second TB that are associated with different hybrid automatic repeat request (HARQ) processes in the same resource allocation, the second ACK/NACK feedback comprising a CBG-level ACK/NACK indicating whether at least one retransmitted CBG corresponding to the first TB failed to be properly decoded and a TB-level ACK/NACK indicating whether the second TB is properly decoded and does not require retransmission.

10. The apparatus of claim 9, wherein the retransmission of the subset of CBGs of the first TB and the transmission of the new data of the second TB are transmitted in a subframe within the same resource allocation.

11. The apparatus of claim 10, wherein the subset of CBGs is retransmitted in a first mini-slot corresponding to a first set of symbols in the subframe, and at least a portion of the second TB is transmitted in a second mini-slot corresponding to a second set of symbols in the subframe.

12. A method of wireless communication of a user equipment (UE), comprising: determining that one or more codeblock groups (CBGs) of a set of CBGs for a first transport block (TB) received from a base station failed to be properly decoded at the UE; sending, to the base station, a first acknowledgement (ACK)/negative ACK (NACK) (ACK/NACK) feedback indicating the one or more CBGs that failed to be properly decoded; receiving, from the base station, a retransmission of CBGs of the set of CBGs of the first TB in response to the first ACK/NACK feedback and a transmission of new data of a second TB, and a downlink control information (DCI) message comprising information indicating retransmitted CBGs of the set of CBGs, wherein the information comprises a CBG-level bitmap that explicitly indicates, in the DCI message, a CBG index for each of the retransmitted CBGs; and sending, to the base station, a second ACK/NACK feedback indicating feedback for the first TB and the second TB that are associated with different hybrid automatic repeat request (HARQ) processes in a same resource allocation, the second ACK/NACK feedback comprising a CBG-level ACK/NACK indicating whether at least one retransmitted CBG corresponding to the first TB failed to be properly decoded and a TB-level ACK/NACK indicating whether the second TB is properly decoded and does not require retransmission.

13. The method of claim 12, wherein the retransmission of CBGs of the first TB and the transmission of the new data of the second TB are received in a subframe within the same resource allocation.

14. The method of claim 13, wherein the first TB, comprising the retransmitted CBGs, is associated with a first HARQ process and the second TB, comprising the new data, is associated with a second HARQ process different than the first HARQ process.

15. The method of claim 13, further comprising: determining that the at least one retransmitted CBG of the first TB failed to be properly decoded; and determining that the second TB has been successfully decoded, wherein the CBG-level ACK/NACK in the second ACK/NACK feedback indicates that the at least one retransmitted CBG failed to be properly decoded and the TB-level ACK/NACK indicates that the second TB has been successfully decoded and that the CBG-level ACK/NACK corresponds to the first TB.

16. The method of claim 12, wherein the DCI message further indicates at least one of a slot boundary between the first TB corresponding to the retransmitted CBGs of the set of CBGs and the second TB corresponding to the new data, or a modulation and coding scheme (MCS) associated with the new data.

17. The method of claim 12, further comprising: determining whether the retransmission of CBGs include the one of more CBGs that failed to be properly decoded based on the information indicating the retransmitted CBGs of the set of CBGs, wherein the second ACK/NACK feedback is sent based on determining whether the retransmission of CBGs include the one or more CBGs that failed to be properly decoded.

18. An apparatus for wireless communication, comprising: at least one processor coupled to a memory and configured to: determine that one or more codeblock groups (CBGs) of a set of CBGs for a first transport block (TB) received from a base station failed to be properly decoded at a user equipment (UE); send, to the base station, a first acknowledgement (ACK)/negative ACK (NACK) (ACK/NACK) feedback indicating the one or more CBGs that failed to be properly decoded; receive, from the base station, a retransmission of CBGs of the set of CBGs of the first TB in response to the first ACK/NACK feedback and a transmission of new data of a second TB, and a downlink control information (DCI) message comprising information indicating retransmitted CBGs of the set of CBGs, wherein the information comprises a CBG-level bitmap that explicitly indicates, in the DCI message, a CBG index for each of the retransmitted CBGs; and send, to the base station, a second ACK/NACK feedback indicating feedback for the first TB and the second TB that are associated with different hybrid automatic repeat request (HARQ) processes in a same resource allocation, the second ACK/NACK feedback comprising a CBG-level ACK/NACK indicating whether at least one retransmitted CBG corresponding to the first TB failed to be properly decoded and a TB-level ACK/NACK indicating whether the second TB is properly decoded and does not require retransmission.

19. The apparatus of claim 18, wherein the retransmission of CBGs of the first TB and the transmission of the new data of the second TB are received in a same subframe within the same resource allocation.

20. The apparatus of claim 19, wherein the at least one processor is further configured to: determine that at least one retransmitted CBG of the first TB failed to be properly decoded; and determine that the second TB has been successfully decoded, wherein the CBG-level ACK/NACK in the second ACK/NACK feedback indicates that the at least one retransmitted CBG failed to be properly decoded and the TB-level ACK/NACK indicates that the second

TB has been successfully decoded and that the first CBG-level ACK/NACK corresponds to the first TB.

21. The apparatus of claim 18, wherein the DCI message further indicates at least one of a slot boundary between the first TB corresponding to the retransmitted CBGs of the set of CBGs and the second TB corresponding to the new data, or a modulation and coding scheme (MCS) associated with the new data.

22. The apparatus of claim 18, wherein the at least one processor is further configured to: determine whether the retransmission of CBGs include the one of more CBGs that failed to be properly decoded based on the information indicating the retransmitted CBGs of the set of CBGs, wherein the second ACK/NACK feedback is sent based on determining whether the retransmission of CBGs include the one or more CBGs.