CLAIMS

~~**WHAT IS CLAIMED IS:**~~

1.~~——~~ A method for wireless communication performed by a user equipment, comprising:

receiving a configuration for transmitting feedback for communications received in multiple virtual mini-slots of a slot, wherein the configuration is based on a partitioning of the slot into the multiple virtual mini-slots;

generating feedback for a communication received in one or more of the multiple virtual mini-slots;

determining a virtual mini-slot ~~over which to transmit the feedback,~~ based at least in part on determining a last symbol of the communication with respect to the one or more of the multiple virtual mini-slots~~; and~~

over which to transmit the feedback; transmitting, during the virtual mini-slot, the feedback for the communication~~.~~

~~2. The method of claim 1, further comprising:~~

; generating second feedback for a second communication received in a second one or more of the multiple virtual mini-slots;

determining a second virtual mini-slot of the slot over which to transmit the second feedback based at least in part on determining a second last symbol of the second communication with respect to the second one or more of the multiple virtual mini-slots; and

transmitting, during the second virtual mini-slot, the second feedback for the second communication,

wherein the second virtual mini-slot is different from the virtual mini-slot, and the second virtual mini-slot and the virtual mini-slot are within the same slot.

~~3.~~——2. The method of claim 1, further comprising receiving a codebook configuration indicating, for each of multiple communications received in the multiple virtual mini-slots, a number of virtual mini-slots between a communication virtual mini-slot during which the last symbol of each of multiple communications is received and a feedback virtual mini-slot during which the feedback for the each of multiple communications is to be transmitted, wherein generating the feedback comprises generating the feedback for each of the multiple communications based on the codebook configuration.

~~4.~~ 3. The method of claim ~~3~~2, wherein generating the feedback comprises multiplexing the feedback for two or more communications based at least in part on determining that the codebook configuration indicates, for the two or more of the multiple communications, a same feedback virtual mini-slot.

~~5.~~ 4. The method of claim ~~3~~2, wherein the codebook configuration further indicates a number of the communications for which to multiplex the feedback in the feedback virtual mini-slot, wherein generating the feedback comprises generating the feedback based on the number of the communications for which to multiplex the feedback.

~~6.~~ 5. The method of claim ~~3~~2, wherein the codebook configuration indicates an index of a feedback starting symbol within the feedback virtual mini-slot of the slot.

~~7.~~ 6. The method of claim 1, wherein generating the feedback comprises grouping semi-persistent scheduling (SPS) communications into multiple groups within the slot, and generating combined feedback for each of the multiple groups, and wherein transmitting the feedback comprises transmitting the combined feedback for a given one of the multiple groups in the determined virtual mini-slot of the group.

~~8.~~ 7. The method of claim ~~7~~6, wherein determining the virtual mini-slot for transmitting the feedback is based at least in part on determining a number of virtual mini-slots between the given one of the multiple groups and a value indicated in an activation downlink control information received for the SPS communications.

~~9.~~ 8. The method of claim ~~7~~6, wherein generating the feedback further comprises grouping dynamically scheduled communications into different multiple groups within the slot, and generating dynamic combined feedback for each of the different multiple groups, and wherein transmitting the feedback comprises multiplexing the combined feedback and the dynamic combined feedback for a given one of the multiple groups in at least one of the one or more of the multiple virtual mini-slots.

~~10.~~ 9. The method of claim ~~9~~8, wherein multiplexing the combined feedback and the dynamic combined feedback comprises determining one group of the multiple groups and one dynamic group of the different multiple groups having the same virtual mini-slot to transmit the corresponding combined feedback and dynamic combined feedback, and multiplexing the combined feedback from the one group with the dynamic combined feedback from the one dynamic group.

~~11.~~ 10. The method of claim ~~10~~9, wherein multiplexing the combined feedback and the dynamic combined feedback comprises appending bits of the combined feedback to bits of the dynamic combined feedback.

~~12.~~ 11. The method of claim ~~10~~9, wherein multiplexing the combined feedback and the dynamic combined feedback comprises bundling the combined feedback into a lesser number of bits and append the bundled feedback to bits of the dynamic combined feedback.

~~13.~~ 12. The method of claim 1, wherein generating the feedback comprises determining, for each of the multiple virtual mini-slots, one or more possible resource allocations, and generating feedback as a number of configured bits for at least a portion of the one or more possible resource allocations.

~~14.~~ 13. The method of claim ~~13~~12, wherein determining, for one of the virtual mini-slots, a corresponding one of the one or more possible resource allocations is based on determining that a last symbol of the corresponding one of the one or more possible resource allocations is within the one of the virtual mini-slots.

~~15.~~ 14. The method of claim ~~13~~12, wherein generating the feedback further comprises generating feedback as the number of configured bits for at least the portion of the one or more possible resource allocations and a number of transport blocks.

~~16.~~ 15. The method of claim 1, wherein receiving the configuration comprises receiving the configuration from a base station in a radio resource control (RRC) message or a downlink control information (DCI) message.

~~17.~~ 16. The method of claim 1, further comprising receiving, in a radio resource control (RRC) message, information indicating the partitioning of the slot.

~~18.~~ 17. The method of claim ~~17~~16, wherein the information includes a bitmap of length 14 indicating the partitioning for each of multiple symbols in the slot.

~~19.~~ 18. The method of claim 1, further comprising receiving, in downlink control information (DCI), information indicating the partitioning of the slot.

~~20.~~ 19. An apparatus for wireless communication, comprising:

a transceiver;

a memory configured to store instructions; and

one or more processors communicatively coupled with the transceiver and the memory, wherein the one or more processors are configured to:

receive a configuration for transmitting feedback for communications received in multiple virtual mini-slots of a slot, wherein the configuration is based on a partitioning of the slot into the multiple virtual mini-slots;

generate feedback for a communication received in one or more of the multiple virtual mini-slots;

determine a virtual mini-slot ~~over which to transmit the feedback,~~ based at least in part on determining a last symbol of the communication with respect to the one or more of the multiple virtual mini-slots~~; and~~

, over which to transmit the feedback; transmit, during the virtual mini-slot, the feedback for the communication~~.~~

~~21. The apparatus of claim 20, wherein the one or more processors are further configured to:~~

; generate second feedback for a second communication received in a second one or more of the multiple virtual mini-slots;

determine a second virtual mini-slot of the slot over which to transmit the second feedback based at least in part on determining a second last symbol of the second communication with respect to the second one or more of the multiple virtual mini-slots; and

transmit, during the second virtual mini-slot, the second feedback for the second communication,

wherein the second virtual mini-slot is different from the virtual mini-slot, and the second virtual mini-slot and the virtual mini-slot are within the same slot.

~~22.~~ 20. The apparatus of claim ~~20~~19, wherein the one or more processors are further configured to receive a codebook configuration indicating, for each of multiple communications received in the multiple virtual mini-slots, a number of virtual mini-slots between a communication virtual mini-slot during which the last symbol of each of multiple communications is received and a feedback virtual mini-slot during which the feedback for the each of multiple communications is to be transmitted, wherein the one or more processors are configured to generate the feedback for each of the multiple communications based on the codebook configuration.

~~23.~~ 21. The apparatus of claim ~~22~~20, wherein the one or more processors are configured to generate the feedback at least in part by multiplexing the feedback for two or more communications based at least in part on determining that the codebook configuration indicates, for the two or more of the multiple communications, a same feedback virtual mini-slot.

~~24.~~ 22. The apparatus of claim ~~22~~20, wherein the codebook configuration further indicates a number of the communications for which to multiplex the feedback in the feedback virtual mini-slot, wherein the one or more processors are configured to generate the feedback based on the number of the communications for which to multiplex the feedback.

~~25.~~ 23. The apparatus of claim ~~22~~20, wherein the codebook configuration indicates an index of a feedback starting symbol within the feedback virtual mini-slot of the slot.

~~26.~~ 24. The apparatus of claim ~~20~~19, wherein the one or more processors are configured to generate the feedback at least in part by grouping semi-persistent scheduling (SPS) communications into multiple groups within the slot, and generating combined feedback for each of the multiple groups, and wherein the one or more processors are configured to transmit the combined feedback for a given one of the multiple groups in the determined virtual mini-slot of the group.

~~27.~~ 25. The apparatus of claim ~~26~~24, wherein the one or more processors are configured to determine the virtual mini-slot for transmitting the feedback based at least in part on determining a number of virtual mini-slots between the given one of the multiple groups and a value indicated in an activation downlink control information received for the SPS communications.

~~28.~~ 26. The apparatus of claim ~~26~~24, wherein the one or more processors are configured to generate the feedback at least in part by grouping dynamically scheduled communications into different multiple groups within the slot, and generating dynamic combined feedback for each of the different multiple groups, and wherein the one or more processors are configured to transmit the feedback at least in part by multiplexing the combined feedback and the dynamic combined feedback for a given one of the multiple groups in at least one of the one or more of the multiple virtual mini-slots.

~~29.~~ 27. The apparatus of claim ~~28~~26, wherein multiplexing the combined feedback and the dynamic combined feedback comprises determining one group of the multiple groups and one dynamic group of the different multiple groups having the same virtual mini-slot to transmit the corresponding combined feedback and dynamic combined feedback, and multiplexing the

combined feedback from the one group with the dynamic combined feedback from the one dynamic group.

~~30.~~ 28. The apparatus of claim ~~29~~27, wherein multiplexing the combined feedback and the dynamic combined feedback comprises appending bits of the combined feedback to bits of the dynamic combined feedback.

~~31.~~ 29. The apparatus of claim ~~29~~27, wherein multiplexing the combined feedback and the dynamic combined feedback comprises bundling the combined feedback into a lesser number of bits and append the bundled feedback to bits of the dynamic combined feedback.

~~32.~~ 30. The apparatus of claim ~~20~~19, wherein the one or more processors are configured to generate the feedback at least in part by determining, for each of the multiple virtual mini-slots, one or more possible resource allocations, and generating feedback as a number of configured bits for at least a portion of the one or more possible resource allocations.

~~33.~~ 31. The apparatus of claim ~~32~~30, wherein the one or more processors are configured to determine, for one of the virtual mini-slots, a corresponding one of the one or more possible resource allocations based on determining that a last symbol of the corresponding one of the one or more possible resource allocations is within the one of the virtual mini-slots.

~~34.~~ 32. The apparatus of claim ~~32~~30, wherein the one or more processors are configured to generate the feedback as the number of configured bits for at least the portion of the one or more possible resource allocations and a number of transport blocks.

~~35.~~ 33. The apparatus of claim ~~20~~19, wherein the one or more processors are configured to receive the configuration from a base station in a radio resource control (RRC) message or a downlink control information (DCI) message.

~~36.~~ 34. The apparatus of claim ~~20~~19, wherein the one or more processors are further configured to receive, in a radio resource control (RRC) message, information indicating the partitioning of the slot.

~~37.~~ 35. The apparatus of claim ~~36~~34, wherein the information includes a bitmap of length 14 indicating the partitioning for each of multiple symbols in the slot.

~~38.~~ 36. The apparatus of claim ~~20~~19, wherein the one or more processors are further configured to receive, in downlink control information (DCI), information indicating the partitioning of the slot.

~~39.~~ 37. An apparatus for wireless communication, comprising:

means for receiving a configuration for transmitting feedback for communications received in multiple virtual mini-slots of a slot, wherein the configuration is based on a partitioning of the slot into the multiple virtual mini-slots;

means for generating feedback for a communication received in one or more of the multiple virtual mini-slots;

means for determining a virtual mini-slot ~~over which to transmit the feedback,~~ based at least in part on determining a last symbol of the communication with respect to the one or more of the multiple virtual mini-slots~~; and~~

, over which to transmit the feedback; means for transmitting, during the virtual mini-slot, the feedback for the communication~~.~~

~~40. The apparatus of claim 39, further comprising:~~

; means for generating second feedback for a second communication received in a second one or more of the multiple virtual mini-slots;

means for determining a second virtual mini-slot of the slot over which to transmit the second feedback based at least in part on determining a second last symbol of the second communication with respect to the second one or more of the multiple virtual mini-slots; and

means for transmitting, during the second virtual mini-slot, the second feedback for the second communication,

wherein the second virtual mini-slot is different from the virtual mini-slot, and the second virtual mini-slot and the virtual mini-slot are within the same slot.

~~41.~~ 38. The apparatus of claim ~~39~~37, further comprising means for receiving a codebook configuration indicating, for each of multiple communications received in the multiple virtual mini-slots, a number of virtual mini-slots between a communication virtual mini-slot during which the last symbol of each of multiple communications is received and a feedback virtual mini-slot during which the feedback for the each of multiple communications is to be transmitted, wherein the means for generating generates the feedback for each of the multiple communications based on the codebook configuration.

~~42.~~ 39. The apparatus of claim ~~41~~38, wherein the means for generating the feedback multiplexes the feedback for two or more communications based at least in part on determining that the codebook configuration indicates, for the two or more of the multiple communications, a same feedback virtual mini-slot.

~~43.~~ 40. The apparatus of claim ~~41~~38, wherein the codebook configuration further indicates a number of the communications for which to multiplex the feedback in the feedback virtual mini-slot, wherein the means for generating generates the feedback based on the number of the communications for which to multiplex the feedback.

~~44.~~ 41. The apparatus of claim ~~41~~38, wherein the codebook configuration indicates an index of a feedback starting symbol within the feedback virtual mini-slot of the slot.

~~45.~~ 42. The apparatus of claim ~~39~~37, wherein the means for generating groups semi-persistent scheduling (SPS) communications into multiple groups within the slot, and generates combined feedback for each of the multiple groups, and wherein the means for transmitting transmits the combined feedback for a given one of the multiple groups in the determined virtual mini-slot of the group.

~~46.~~ 43. The apparatus of claim ~~45~~42, wherein the means for determining the virtual mini-slot for transmitting the feedback is based at least in part on determining a number of virtual mini-slots between the given one of the multiple groups and a value indicated in an activation downlink control information received for the SPS communications.

~~47.~~ 44. The apparatus of claim ~~45~~42, wherein the means for generating groups dynamically scheduled communications into different multiple groups within the slot, and generates dynamic combined feedback for each of the different multiple groups, and wherein the means for transmitting multiplexes the combined feedback and the dynamic combined feedback for a given one of the multiple groups in at least one of the one or more of the multiple virtual mini-slots.

~~48.~~ 45. The apparatus of claim ~~47~~44, wherein the means for transmitting multiplexes the combined feedback and the dynamic combined feedback at least in part by determining one group of the multiple groups and one dynamic group of the different multiple groups having the same virtual mini-slot to transmit the corresponding combined feedback and dynamic combined feedback, and multiplexes the combined feedback from the one group with the dynamic combined feedback from the one dynamic group.

~~49.~~ 46. The apparatus of claim ~~48~~45, wherein the means for transmitting multiplexes the combined feedback and the dynamic combined feedback at least in part by appending bits of the combined feedback to bits of the dynamic combined feedback.

~~50.~~ 47. The apparatus of claim ~~48~~45, wherein the means for transmitting multiplexes the combined feedback and the dynamic combined feedback at least in part by bundling the combined feedback into a lesser number of bits and append the bundled feedback to bits of the dynamic combined feedback.

~~51.~~ 48. The apparatus of claim ~~39~~37, wherein the means for generating determines, for each of the multiple virtual mini-slots, one or more possible resource allocations, and generates feedback as a number of configured bits for at least a portion of the one or more possible resource allocations.

~~52.~~ 49. The apparatus of claim ~~51~~48, wherein the means for determining determines, for one of the virtual mini-slots, a corresponding one of the one or more possible resource allocations based on determining that a last symbol of the corresponding one of the one or more possible resource allocations is within the one of the virtual mini-slots.

~~53.~~ 50. The apparatus of claim ~~51~~48, wherein the means for generating generates feedback as a number of configured bits for at least the portion of the one or more possible resource allocations and a number of transport blocks.

~~54.~~ 51. The apparatus of claim ~~39~~37, wherein the means for receiving receives the configuration from a base station in a radio resource control (RRC) message or a downlink control information (DCI) message.

~~55.~~ 52. The apparatus of claim ~~39~~37, further comprising means for receiving, in a radio resource control (RRC) message, information indicating the partitioning of the slot.

~~56.~~ 53. The apparatus of claim ~~55~~52, wherein the information includes a bitmap of length 14 indicating the partitioning for each of multiple symbols in the slot.

~~57.~~ 54. The apparatus of claim ~~39~~37, further comprising means for receiving, in downlink control information (DCI), information indicating the partitioning of the slot.

~~58. A~~55. A non-transitory computer-readable medium, comprising code executable by one or more processors for wireless communication, the code comprising code for:

receiving a configuration for transmitting feedback for communications received in multiple virtual mini-slots of a slot, wherein the configuration is based on a partitioning of the slot into the multiple virtual mini-slots;

generating feedback for a communication received in one or more of the multiple virtual mini-slots;

determining a virtual mini-slot ~~over which to transmit the feedback,~~ based at least in part on determining a last symbol of the communication with respect to the one or more of the multiple virtual mini-slots~~; and~~

, over which to transmit the feedback; transmitting, during the virtual mini-slot, the feedback for the communication~~.~~

~~59. The computer-readable medium of claim 58, further comprising:~~

~~code for;~~ generating second feedback for a second communication received in a second one or more of the multiple virtual mini-slots;

~~code for~~ determining a second virtual mini-slot of the slot over which to transmit the second feedback based at least in part on determining a second last symbol of the second communication with respect to the second one or more of the multiple virtual mini-slots; and

~~code for~~ transmitting, during the second virtual mini-slot, the second feedback for the second communication, wherein the second virtual mini-slot is different from the virtual mini-slot, and the second virtual mini-slot and the virtual mini-slot are within the same slot.

~~wherein the second virtual mini-slot is different from the virtual mini-slot, and the second virtual mini-slot and the virtual mini-slot are within the same slot.~~

~~60.~~ 56. The computer-readable medium of claim ~~58~~55, further comprising code for receiving a codebook configuration indicating, for each of multiple communications received in the multiple virtual mini-slots, a number of virtual mini-slots between a communication virtual mini-slot during which the last symbol of each of multiple communications is received and a feedback virtual mini-slot during which the feedback for the each of multiple communications is to be transmitted, wherein the code for generating generates the feedback for each of the multiple communications based on the codebook configuration.

~~61.~~ 57. The computer-readable medium of claim ~~60~~56, wherein the code for generating the feedback multiplexes the feedback for two or more communications based at least in part on

determining that the codebook configuration indicates, for the two or more of the multiple communications, a same feedback virtual mini-slot.

~~62.~~ 58. The computer-readable medium of claim ~~60~~56, wherein the codebook configuration further indicates a number of the communications for which to multiplex the feedback in the feedback virtual mini-slot, wherein the code for generating generates the feedback based on the number of the communications for which to multiplex the feedback.

~~63.~~ 59. The computer-readable medium of claim ~~60~~56, wherein the codebook configuration indicates an index of a feedback starting symbol within the feedback virtual mini-slot of the slot.

~~64.~~ 60. The computer-readable medium of claim ~~58~~55, wherein the code for generating groups semi-persistent scheduling (SPS) communications into multiple groups within the slot, and generates combined feedback for each of the multiple groups, and wherein the code for transmitting transmits the combined feedback for a given one of the multiple groups in the determined virtual mini-slot of the group.

~~65.~~ 61. The computer-readable medium of claim ~~64~~60, wherein the code for determining the virtual mini-slot for transmitting the feedback is based at least in part on determining a number of virtual mini-slots between the given one of the multiple groups and a value indicated in an activation downlink control information received for the SPS communications.

~~66.~~ 62. The computer-readable medium of claim ~~64~~60, wherein the code for generating groups dynamically scheduled communications into different multiple groups within the slot, and generates dynamic combined feedback for each of the different multiple groups, and wherein the code for transmitting multiplexes the combined feedback and the dynamic combined feedback for a given one of the multiple groups in at least one of the one or more of the multiple virtual mini-slots.

~~67.~~ 63. The computer-readable medium of claim ~~66~~62, wherein the code for transmitting multiplexes the combined feedback and the dynamic combined feedback at least in part by determining one group of the multiple groups and one dynamic group of the different multiple groups having the same virtual mini-slot to transmit the corresponding combined feedback and dynamic combined feedback, and multiplexes the combined feedback from the one group with the dynamic combined feedback from the one dynamic group.

~~68.~~ 64. The computer-readable medium of claim ~~67~~63, wherein the code for transmitting multiplexes the combined feedback and the dynamic combined feedback at least in part by appending bits of the combined feedback to bits of the dynamic combined feedback.

~~69.~~ 65. The computer-readable medium of claim ~~67~~63, wherein the code for transmitting multiplexes the combined feedback and the dynamic combined feedback at least in part by bundling the combined feedback into a lesser number of bits and append the bundled feedback to bits of the dynamic combined feedback.

~~70.~~ 66. The computer-readable medium of claim ~~58~~55, wherein the code for generating determines, for each of the multiple virtual mini-slots, one or more possible resource allocations, and generates feedback as a number of configured bits for at least a portion of the one or more possible resource allocations.

~~71.~~ 67. The computer-readable medium of claim ~~70~~66, wherein the code for determining determines, for one of the virtual mini-slots, a corresponding one of the one or more possible resource allocations based on determining that a last symbol of the corresponding one of the one or more possible resource allocations is within the one of the virtual mini-slots.

~~72.~~ 68. The computer-readable medium of claim ~~70~~66, wherein the code for generating generates feedback as a number of configured bits for at least the portion of the one or more possible resource allocations and a number of transport blocks.

~~73.~~ 69. The computer-readable medium of claim ~~58~~55, wherein the code for receiving receives the configuration from a base station in a radio resource control (RRC) message or a downlink control information (DCI) message.

~~74.~~ 70. The computer-readable medium of claim ~~58~~55, further comprising code for receiving, in a radio resource control (RRC) message, information indicating the partitioning of the slot.

~~75.~~ 71. The computer-readable medium of claim ~~74~~70, wherein the information includes a bitmap of length 14 indicating the partitioning for each of multiple symbols in the slot.

~~76.~~ 72. The computer-readable medium of claim ~~58~~55, further comprising code for receiving, in downlink control information (DCI), information indicating the partitioning of the slot.