CLAIMS

1. A wireless transmit/receive unit (WTRU) comprising a processor configured to:

receive a radio resource control (RRC) message, the RRC message indicating a plurality of radio resource reservation patterns, wherein each respective radio resource reservation pattern is associated with a respective recurrence period, and the RRC message comprises a respective first indication of time domain resources corresponding to the respective radio resource reservation pattern and a respective second indication of frequency domain resources corresponding to the respective radio resource reservation pattern;

receive a downlink control information (DCI), wherein the DCI indicates radio resources allocated to the WTRU for a downlink transmission, the DCI comprises a field, the field indicating that a first radio resource reservation pattern of the plurality of radio resource reservation patterns indicated by the RRC message is to be used for receiving the downlink transmission, and that a second radio resource reservation pattern of the plurality of radio resource reservation patterns indicated by the RRC message is reserved and is not to be used for receiving the downlink transmission; and

receive data associated with the downlink transmission, wherein the data is received using a portion of the radio resources allocated to the WTRU for the downlink transmission, the portion of the radio resources used to receive the data including the first radio resource reservation pattern and excluding the second radio resource reservation pattern in accordance with the field comprised in the DCI.

2. The WTRU of claim 1, wherein the respective recurrence period corresponds to a periodic repetition of the time domain resources and the frequency domain resources corresponding to the respective radio resource reservation pattern.

3. The WTRU of claim 1, wherein the respective first indication of time domain resources corresponding to the respective radio resource reservation pattern and the respective second indication of frequency domain resources corresponding to the respective radio resource reservation pattern comprised in the RRC message indicate which resource elements correspond to the respective radio resource reservation pattern.

4. The WTRU of claim 1, wherein the data corresponds to a transport block, and the processor is configured to determine that the second radio resource reservation pattern indicated using the field comprised in the DCI does not include bits of the transport block.

5. The WTRU of claim 1, wherein the RRC message comprises an indication of a respective periodicity corresponding to the respective recurrence period of the respective radio resource reservation pattern.

6. The WTRU of claim 1, wherein each of the first radio resource reservation pattern and the second radio resource reservation pattern at least partially overlap with the radio resources allocated for the downlink transmission.

7. The WTRU of claim 1, wherein the processor is further configured to:

receive a second physical downlink control channel (PDCCH) transmission, wherein the second PDCCH transmission comprises second DCI, the second DCI indicates second radio resources allocated to the WTRU for a second downlink transmission, the second DCI comprises a second field, the second field indicating that the first radio resource reservation pattern of the plurality of radio resource reservation patterns indicated by the RRC message is to be used for receiving the second downlink transmission and that the second radio resource reservation pattern of the plurality of radio resource reservation patterns indicated by the RRC message is to be used for receiving the second downlink transmission; and

receive second data associated with the second downlink transmission, wherein the second data is received using the second radio resources allocated to the WTRU for the second downlink transmission, the second radio resources used to receive the second data including the first radio resource reservation pattern and the second radio resource reservation pattern in accordance with the second field comprised in the second DCI.

8. The WTRU of claim 1, wherein the at least one radio resource reservation pattern corresponds to a radio resource allocation region (RRAR).

9. The WTRU of claim 1, wherein the processor is further configured to:

receive a third physical downlink control channel (PDCCH) transmission, wherein the third PDCCH transmission comprises third DCI, the third DCI indicates third radio resources allocated to the WTRU for a third downlink transmission, the third DCI comprises a third field, the third field indicates that the first radio resource reservation pattern of the plurality of radio resource reservation patterns indicated by the RRC message is reserved and is not to be used for receiving the second downlink transmission and that the second radio resource reservation pattern of the plurality of radio resource reservation patterns indicated by the RRC message is reserved and is not to be used for receiving the third downlink transmission; and

receive third data associated with the third downlink transmission, wherein the third data is received using a portion of the third radio resources allocated to the WTRU for the third downlink transmission, the portion of the third radio resources used to receive the second data excluding the first radio resource reservation pattern and the second radio resource reservation pattern in accordance with the third field comprised in the third DCI.

10. The WTRU of claim 1, wherein the respective second indication of frequency domain resources corresponding to the respective radio resource reservation pattern comprises an indication

of which physical resource blocks of a bandwidth part correspond to the respective radio resource reservation pattern.

11. The WTRU of claim 1, wherein a respective subcarrier spacing is indicated for each of the plurality of radio resource reservation patterns indicated by the RRC message.

12. The WTRU of claim 11, wherein the respective first indication of time domain resources corresponding to the respective radio resource reservation pattern comprises a bitmap, and the bitmap indicates which orthogonal frequency divisional multiplexing (OFDM) symbols correspond to the respective radio resource reservation pattern.

13. A method implemented by a wireless transmit/receive unit (WTRU), the method comprising:

receiving a radio resource control (RRC) message, the RRC message indicating a plurality of radio resource reservation patterns, wherein each respective radio resource reservation pattern is associated with a respective recurrence period, and the RRC message comprises a respective first indication of time domain resources corresponding to the respective radio resource reservation pattern and a respective second indication of frequency domain resources corresponding to the respective radio resource reservation pattern;

receiving downlink control information (DCI), wherein the DCI indicates radio resources allocated to the WTRU for a downlink transmission, the DCI comprises a field, the field indicating that a first radio resource reservation pattern of the plurality of radio resource reservation patterns indicated by the RRC message is to be used for receiving the downlink transmission and that a second radio resource reservation pattern of the plurality of radio resource reservation patterns indicated by the RRC message is reserved and is not to be used for receiving the downlink transmission;

receiving data associated with the downlink transmission, wherein the data is received using a portion of the radio resources allocated to the WTRU for the downlink transmission, the portion of the radio resources used to receive the data including the first radio resource reservation pattern and excluding the second radio resource reservation pattern in accordance with the field comprised in the DCI.

14. The method of claim 13, wherein the respective recurrence period corresponds to a periodic repetition of the time domain resources and the frequency domain resources corresponding to the respective radio resource reservation pattern.

15. The method of claim 13, wherein the respective first indication of time domain resources corresponding to the respective radio resource reservation pattern and the respective second indication of frequency domain resources corresponding to the respective radio resource

reservation pattern comprised in the RRC message indicate which respective resource elements correspond to the respective radio resource reservation pattern.

16. The method of claim 13, wherein data corresponds to a transport block, and the method comprises determining that the second radio resource reservation pattern indicated using the field comprised in the DCI does not include bits of the transport block.

17. The method of claim 13, wherein the RRC message comprises an indication of a respective periodicity corresponding to the respective radio resource reservation pattern..

18. The method of claim 13, wherein each of the first radio resource reservation pattern and the second radio resource reservation pattern at least partially overlap with the radio resources allocated for the downlink transmission.

19. The method of claim 13, wherein the method further comprises:

receiving a second PDCCH transmission, wherein the second PDCCH transmission comprises second DCI, the second DCI indicates second radio resources allocated to the WTRU for a second downlink transmission, the second DCI comprises a second field, the second field indicating that the first radio resource reservation pattern of the plurality of radio resource reservation patterns indicated by the RRC message is to be used for receiving the second downlink transmission and that the second radio resource reservation pattern of the plurality of radio resource reservation patterns indicated by the RRC message is to be used for receiving the second downlink transmission; and

receiving second data associated with the second downlink transmission, wherein the second data is received using the second radio resources allocated to the WTRU for the second downlink transmission, the second radio resources to be used to receive the second data including the first radio resource reservation pattern and the second radio resource reservation pattern in accordance with the second field comprised in the second DCI.

20. The method of claim 13, wherein the method further comprises:

receiving a third PDCCH transmission, wherein the third PDCCH transmission comprises third DCI, the third DCI indicates third radio resources allocated to the WTRU for a third downlink transmission, the third DCI comprises a third field, the third field indicates that the first radio resource reservation pattern of the plurality of radio resource reservation patterns indicated by the RRC message is reserved and is not to be used for receiving the second downlink transmission and that the second radio resource reservation pattern of the plurality of radio resource reservation patterns indicated by the RRC message is reserved and is not to be used for receiving the third downlink transmission; and

receiving third data associated with the third downlink transmission, wherein the third data is received using a portion of the third radio resources allocated to the WTRU for the third downlink transmission, the portion of the third radio resources used to receive the second data excluding the

first radio resource reservation pattern and the second radio resource reservation pattern in accordance with the third field comprised in the third DCI.