CLAIMS

What is claimed is:

1. A method for usesidelink communication in a first wireless transmit/receive unit (WTRU), the method comprising:

performing, by the first WTRU configured with a first resource pool and a second resource pool, at least one congestion measurement of the second resource pool to determine a transmission of first data on the first resource pool, wherein the second resource pool is configured for use by a second WTRU for transmission of second data associated with a higher priority than the first data

selecting, from a set of percentage value thresholds configured by the WTRU, a percentage value threshold based on a priority of data corresponding to each percentage value threshold in the set; and

on a condition that a number of available resources determined based on one or more quality of service (QoS) parameters of the data to be transmitted is above or equal to a threshold determined based on the percentage value threshold selected from the set of the percentage value thresholds,

transmitting, usingbased on the at least one congestion measurement of the availablesecond resources, the data to anotherpool associated with the second WTRU, the first data using the first resource pool after a predetermined period of time.

2. The method of claim 1, wherein the at least one congestion measurement comprises at least one of channel occupancy, received signal strength, or channel busy ratio.

3. The method of claim 1, wherein the first resource pool or the second resource pool is a set of radio resources comprising one or more elements selected from at least one of a time domain, a frequency domain, or a spatial domain.

24. The method of claim 1, further comprising:

on a condition that the number of availableat least one congestion measurement of the second resources pool is below a predetermined based on the one or more QoS parameters of the data to be transmitted is below the threshold determined based on the percentage value threshold selected from the set of percentage value threshold, increasing a reference signal received power (RSRP) threshold for the resource selectiontransmitting the first data using the first resource pool without a delay of time.

35. The method of claim 1, further comprising:

receiving configuration information that associates each percentage value threshold in the set to the priority of data to be transmittedon a condition that the at least one congestion measurement of the second resource pool is above a predetermined threshold, determining not to transmit the first data using the first resource pool.

46. The method of claim 15, further comprising:

determining the available resources for the resource selection; and

calculating the percentage of the available resources~~deferring a transmission of the first data using the first resource pool for the predetermined period of time~~.

57. The method of claim 46, wherein the available resources are determined based on ProSe per packet priority (PPPP), ProSe per packet reliability (PPPR), one or more range parameters, or one or more 5G QoS indicators (5QIs)~~further comprising:~~

~~storing the first data in a buffer of the first WTRU until the first WTRU resumes the transmission of the first data using the first resource pool~~.

~~8. The method of claim 5, further comprising:~~

~~preempting a reserved transmission of the first data using the first resource pool.~~

~~9. The method of claim 5, further comprising:~~

~~reducing an amount of resources in the first resource pool; and~~

~~transmitting the first data based using remaining resources in the first resource pool.~~

~~10. The method of claim 1, further comprising:~~

~~receiving, from a base station, a resource pool configuration including information associated with the first resource pool and the second resource pool, wherein the first resource pool is configured for transmission of the first data associated with the first WTRU and the second resource pool is configured for transmission of the second data associated with the second WTRU.~~

611. A ~~first~~ wireless transmit/receive unit (WTRU) ~~for sidelink communication, the WTRU~~ comprising:

a processor and ~~configured with a first resource pool for use by the first WTRU for transmission of first data and a second resource pool for use by a second WTRU for transmission of second data~~; a transceiver,

the processor and the transceiver~~further~~ configured to: select, from a set of percentage value thresholds configured by the processor, a percentage value threshold based on a priority of data corresponding to each percentage value threshold in the set~~perform at least one congestion measurement of the second resource pool associated with the second data to determine the transmission of first data on the first resource pool, wherein the second data are associated with a higher priority than the first data~~; and

~~a transmitter configured to~~ transmit, on a condition that a number of available resources determined based on one or more quality of service (QoS) parameters of the data to be transmitted is above or equal to a threshold determined based on the percentage value threshold selected from the set of the percentage value thresholds, the data to another WTRU using at least one of the

available resourcesbased on the at least one congestion measurement of the second resource pool associated with the second WTRU, the first data using the first resource pool after a predetermined period of time.

12. The first WTRU of claim 11, wherein the at least one congestion measurement comprises at least one of channel occupancy, received signal strength, or channel busy ratio.

13. The first WTRU of claim 11, wherein the first resource pool or the second resource pool is a set of radio resources comprising one or more elements selected from at least one of a time domain, a frequency domain, or a spatial domain.

14. The first WTRU of claim 11, wherein the transmitter is further configured to transmit, on a condition that the at least one congestion measurement of the second resource pool is below a predetermined threshold, the first data using the first resource pool without a delay of time.

715. The first WTRU of claim 611, wherein the processor and the transceiver are further configured to increase, on a condition that the number of the available resources determined based on the one or more QoS parameters of the data to be transmitted is below the threshold determined based on the percentage value threshold selected from the set of percentage value thresholds, a reference signal received power (RSRP) threshold for the resource selectionis further configured determine, on a condition that the at least one congestion measurement of the second resource pool is above a predetermined threshold, not to transmit the first data using the first resource pool.

816. The first WTRU of claim 615, wherein the processor and the transceiver are configured to receive configuration information that associates each percentage value threshold in the set to the priority of data to be transmitted is further configured to defer a transmission of the first data using the first resource pool for the predetermined period of time.

917. The first WTRU of claim 16, wherein the processor is further configured to: determine the available resources for the resource selection; and

calculate the percentage of the available resources store the first data in a buffer of the first WTRU until the first WTRU resumes the transmission of the first data using the first resource pool.

1018. The first WTRU of claim 915, wherein the available resources are determined based on ProSe per packet priority (PPPP), ProSe per packet reliability (PPPR), one or more range parameters, or one or more 5G QoS indicators (5QIs)processor is further configured to preempt a reserved transmission of the first data using the first resource pool.

19. The first WTRU of claim 15, wherein the processor is further configured to reduce an amount of resources in the first resource pool, and wherein the transmitter is further configured to transmit the first data based using remaining resources in the first resource pool.

20. The first WTRU of claim 11, further comprising:

a receiver configured to receive, from a base station, a resource pool configuration including information associated with the first resource pool and the second resource pool, wherein the first resource pool is configured for transmission of the first data associated with the first WTRU and the second resource pool is configured for transmission of the second data associated with the second WTRU.