

SUMMARY

The example embodiments disclosed herein are directed to solving the issues relating to one or more of the problems presented in the prior art, as well as providing additional features that will become readily apparent by reference to the following detailed description when taken in conjunction with the accompany drawings. In accordance with various embodiments, example systems, methods, devices and computer program products are disclosed herein. It is understood, however, that these embodiments are presented by way of example and are not limiting, and it will be apparent to those of ordinary skill in the art who read the present disclosure that various modifications to the disclosed embodiments is made while remaining within the scope of this disclosure.

In a first aspect, the present disclosure provides a wireless communication method, comprising: receiving, by a wireless communication device, configurations of a plurality of resource pools for sidelink communications; wherein the plurality of resource pools comprise a first list indicating a first subset of the plurality of resource pools and a second list indicating a second subset of the plurality of resource pools; wherein each of the plurality of resource pools includes at least one of: a first type of resources that are each configured for the wireless communication device to communicate control information in the sidelink communications; a second type of resources that are each configured for the wireless communication device to communicate data in the sidelink communications; and a third type of resources that are each configured for the wireless communication device to communicate feedback in the sidelink communications.

In a second aspect, the present disclosure provides a wireless communication method, comprising: configuring, by a wireless communication node, a plurality of resource pools for sidelink communications; wherein the plurality of resource pools comprise a first list indicating a first subset of the plurality of resource pools and a second list indicating a second subset of the plurality of resource pools; and wherein each of the plurality of resource pools includes at least one of: a first type of resources that are each configured for a wireless communication device to communicate control information in the sidelink communications; a second type of resources that are each configured for the wireless communication device to communicate data in the

sidelink communications; and a third type of resources that are each configured for the wireless communication device to communicate feedback in the sidelink communications.

In a third aspect, the present disclosure provides a communication apparatus comprising a processor configured to: receive configurations of a plurality of resource pools for sidelink communications; wherein the plurality of resource pools comprise a first list indicating a first subset of the plurality of resource pools and a second list indicating a second subset of the plurality of resource pools; wherein each of the plurality of resource pools includes at least one of: a first type of resources that are each configured for a wireless communication device to communicate control information in the sidelink communications; a second type of resources that are each configured for the wireless communication device to communicate data in the sidelink communications; and a third type of resources that are each configured for the wireless communication device to communicate feedback in the sidelink communications.

In a fourth aspect, the present disclosure provides a communication apparatus comprising a processor configured to: configure a plurality of resource pools for sidelink communications; wherein the plurality of resource pools comprise a first list indicating a first subset of the plurality of resource pools and a second list indicating a second subset of the plurality of resource pools; and wherein each of the plurality of resource pools includes at least one of: a first type of resources that are each configured for a wireless communication device to communicate control information in the sidelink communications; a second type of resources that are each configured for the wireless communication device to communicate data in the sidelink communications; and a third type of resources that are each configured for the wireless communication device to communicate feedback in the sidelink communications.

In one embodiment, an example wireless communication method includes: configuring, by a wireless communication node, a plurality of resource pools for sidelink communications. The method further includes configuring, by the wireless communication node, a first list indicating a first subset of the plurality of resource pools and a second list indicating a second subset of the plurality of resource pools. Each of the plurality of resource pools includes at least one of, a first type of resources that are each configured for a plurality of wireless communication devices to communicate control information in the sidelink communications, a second type of resources that are each configured for the plurality of wireless communication devices to communicate data in the sidelink communications, and a third type of

resources that are each configured for the plurality of wireless communication devices to communicate feedback in the sidelink communications.

In another embodiment, a wireless communication method includes: receiving, by one of a plurality of wireless communication devices, configurations of a plurality of resource pools for sidelink communications. The method further includes receiving, by the wireless communication device, a first list and a second list, the first list indicating a first subset of the plurality of resource pools and the second list indicating a second subset of the plurality of resource pools. Each the plurality of resource pools includes at least one of a first type of resources that are each configured for the plurality of wireless communication devices to communicate control information in the sidelink communications, a second type of resources that are each configured for the plurality of wireless communication devices to communicate

CLAIMS

1. A wireless communication method, comprising:
 - receiving, by a wireless communication device, configurations of a plurality of resource pools for sidelink communications;
 - wherein the plurality of resource pools comprise a first list indicating a first subset of the plurality of resource pools and a second list indicating a second subset of the plurality of resource pools;
 - wherein each of the plurality of resource pools includes at least one of: a first type of resources that are each configured for the wireless communication device to communicate control information in the sidelink communications; a second type of resources that are each configured for the wireless communication device to communicate data in the sidelink communications; and a third type of resources that are each configured for the wireless communication device to communicate feedback in the sidelink communications.
2. The wireless communication method of claim 1, wherein each of the first subset of resource pools indicated in the first list is configured for the device to perform at least one of: transmitting the control information, transmitting the data, or receiving the feedback, and wherein each of the second subset of resource pools indicated in the second list is configured for the wireless communication device to perform at least one of: receiving the control information, receiving the data, or transmitting the feedback.
3. The wireless communication method of claim 1, further comprising:
 - transmitting, by the wireless communication device, a control information on the first type of resources on one of the first subset of resource pools and a data information on the second type of resources on the same resource pool; and
 - receiving, by the wireless communication device, a feedback information on the third type of resources which are associated with the second type of resources.
4. The wireless communication method of claim 3, further comprising:

determining, by the wireless communication device, a time interval between the second type of resources and the third type of resources to be A slots, wherein A is equal to or bigger than M slots; and

calculating, by the wireless communication device, the A slots based on a slot that is identified as belonging to at least one of the plurality of resource pools.

5. The wireless communication method of claim 3, further comprising:

determining, by the wireless communication device, a frequency bandwidth of the third type of resources to be within a bandwidth of the second type of the resources.

6. The wireless communication method of claim 1, wherein the feedback is configured to be enabled to make the third type of resources available, or to be disabled to make the third type of resources unavailable.

7. The wireless communication method of claim 1, wherein each of the plurality of resource pools comprises a periodicity of N slots for the third type of resources, wherein N is configured on a per resource pool basis, and wherein the N slots are calculated based on a slot that is identified as belonging to the resource pool.

8. The wireless communication method of claim 1, wherein the third type of resources are associated with the second type of resources in a corresponding one of the resource pools.

9. A wireless communication method, comprising:

configuring, by a wireless communication node, a plurality of resource pools for sidelink communications;

wherein the plurality of resource pools comprise a first list indicating a first subset of the plurality of resource pools and a second list indicating a second subset of the plurality of resource pools; and

wherein each of the plurality of resource pools includes at least one of: a first type of resources that are each configured for a wireless communication device to communicate control information in the sidelink communications; a second type of resources that are each configured

for the wireless communication device to communicate data in the sidelink communications; and a third type of resources that are each configured for the wireless communication device to communicate feedback in the sidelink communications.

10. The wireless communication method of claim 9, wherein each of the first subset of resource pools indicated in the first list is configured for the wireless communication device to perform at least one of: transmitting the control information, transmitting the data, or receiving the feedback, and wherein each of the second subset of resource pools indicated in the second list is configured for the wireless communication device to perform at least one: receiving the control information, receiving the data, or transmitting the feedback.

11. The wireless communication method of claim 9, wherein the feedback is configured to be enabled to make the third type of resources available, or to be disabled to make the third type of resources unavailable.

12. The wireless communication method of claim 9, wherein each of the plurality of resource pools comprises a periodicity of N slots for the third type of resources, wherein N is configured on a per resource pool basis, and wherein the N slots are calculated based on a slot that is identified as belonging to the resource pool.

13. The wireless communication method of claim 9, wherein the third type of resources are associated with the second type of resources in a corresponding one of the resource pools.

14. A communication apparatus comprising a processor configured to:
receive configurations of a plurality of resource pools for sidelink communications;
wherein the plurality of resource pools comprise a first list indicating a first subset of the plurality of resource pools and a second list indicating a second subset of the plurality of resource pools;
wherein each of the plurality of resource pools includes at least one of: a first type of resources that are each configured for a wireless communication device to communicate control information in the sidelink communications; a second type of resources that are each configured

for the wireless communication device to communicate data in the sidelink communications; and a third type of resources that are each configured for the wireless communication device to communicate feedback in the sidelink communications.

15. The communication apparatus of claim 14, wherein each of the first subset of resource pools indicated in the first list is configured for the wireless communication device to perform at least one of: transmitting the control information, transmitting the data, or receiving the feedback, and wherein each of the second subset of resource pools indicated in the second list is configured for the wireless communication device to perform at least one of: receiving the control information, receiving the data, or transmitting the feedback.

16. The communication apparatus of claim 14, wherein the feedback is configured to be enabled to make the third type of resources available, or to be disabled to make the third type of resources unavailable.

17. The communication apparatus of claim 14, wherein each of the plurality of resource pools comprises a periodicity of N slots for the third type of resources, wherein N is configured on a per resource pool basis, and wherein the N slots are calculated based on a slot that is identified as belonging to the resource pool.

18. The communication apparatus of claim 14, wherein the third type of resources are associated with the second type of resources in a corresponding one of the resource pools.

19. A communication apparatus comprising a processor configured to:
configure a plurality of resource pools for sidelink communications;
wherein the plurality of resource pools comprise a first list indicating a first subset of the plurality of resource pools and a second list indicating a second subset of the plurality of resource pools; and

wherein each of the plurality of resource pools includes at least one of: a first type of resources that are each configured for a wireless communication device to communicate control information in the sidelink communications; a second type of resources that are each configured

for the wireless communication device to communicate data in the sidelink communications; and a third type of resources that are each configured for the wireless communication device to communicate feedback in the sidelink communications.

20. The communication apparatus of claim 19, wherein each of the first subset of resource pools indicated in the first list is configured for the wireless communication device to perform at least one of: transmitting the control information, transmitting the data, or receiving the feedback, and wherein each of the second subset of resource pools indicated in the second list is configured for the wireless communication device to perform at least one: receiving the control information, receiving the data, or transmitting the feedback.