

CLAIMS

~~WHAT IS CLAIMED IS:~~

1. A method for wireless communications performed by a base station (BS), comprising:

determining a first interleaved mapping that maps a first interleaving unit of N consecutive first virtual resource blocks (VRBs) to N consecutive first physical resource blocks (PRBs), wherein each first PRB comprises a set of frequency resources during a period;

transmitting a first grant allocating the first interleaving unit of first VRBs to a first user equipment (UE); and

communicating with the first UE via the first PRBs mapped to the first VRBs of the first interleaving unit.

2. The method of claim 1, wherein:

the first interleaved mapping maps each interleaving unit of a plurality of interleaving units to a plurality of PRB bundles,

each PRB bundle of the plurality of PRB bundles has a same number of PRBs, and

the grant allocates the plurality of the interleaving units.

3. The method of claim 1, further comprising:

transmitting an indication of the first interleaved mapping to the UE.

4. The method of claim 3, wherein transmitting the indication comprises:

sending a first radio resource control (RRC) configuration comprising the indication of the first interleaved mapping to the UE.

5. The method of claim 4, further comprising:

sending a second RRC configuration indicating a change of the first interleaved mapping to the UE.

6. The method of claim 1, wherein the first interleaved mapping is specific to a first bandwidth part (BWP), and the method further comprises:

determining a second interleaved mapping specific to the first BWP that maps a second interleaving unit of M consecutive second VRBs to M consecutive second PRBs;

transmitting a second grant allocating the second interleaving unit of second VRBs to a second UE; and

communicating with the second UE via the second PRBs mapped to the second VRBs of the second interleaving unit.

7. The method of claim 6, wherein M is not equal to N .

8. The method of claim 1, wherein the first interleaved mapping maps the first interleaving unit to a plurality of PRB bundles.

9. The method of claim 1, wherein a PRB bundle includes the N consecutive first PRBs and upper and lower boundaries of the PRB bundle differ from boundaries of PRB bundles of a carrier-specific PRB bundle grid.

10. The method of claim 1, wherein the first interleaved mapping maps a plurality of first interleaving units of VRBs to a plurality of PRB bundles and the method further comprises:

semi-statically configuring VRBs of one or more of the first interleaving units as null-RBs.

11. The method of claim 1, further comprising:

reserving one or more PRBs for small RB allocations; and

designating at least one interleaving unit corresponding to the reserved PRBs as null-RBs.

12. The method of claim 1, wherein one or more of the frequency resources are reserved and communicating with the first UE comprises:

determining reserved portions of the first VRBs corresponding to the reserved frequency resources;

rate-matching data to the first VRBs excluding the reserved portions; and

transmitting the data via the first PRBs.

13. The method of claim 1, wherein one or more of the frequency resources are reserved and communicating with the first UE comprises:

signaling an indication of the reserved frequency resources to the UE.

~~14. A method for wireless communications performed by a user equipment (UE), comprising:~~

~~—determining an interleaved mapping that maps an interleaving unit of N consecutive virtual resource blocks (VRBs) to N consecutive physical resource blocks (PRBs), wherein each PRB comprises a set of frequency resources during a period;~~

~~—receiving a grant allocating the interleaving unit of VRBs from a base station (BS); and~~

~~—communicating with the BS via the PRBs mapped to the VRBs of the interleaving unit.~~

~~15. The method of claim 14, wherein:~~

~~—the interleaved mapping maps each interleaving unit of a plurality of interleaving units to a plurality of PRB bundles,~~

~~—each PRB bundle of the plurality of PRB bundles has a same number of PRBs, and~~

~~—the grant allocates the plurality of the interleaving units.~~

~~16. The method of claim 14, further comprising:~~

~~—receiving an indication of the interleaved mapping from the BS.~~

17. — The method of claim 16, wherein receiving the indication comprises:
 — receiving a first radio resource control (RRC) configuration comprising the indication of the interleaved mapping from the BS.
18. — The method of claim 17, further comprising:
 — receiving a second RRC configuration indicating a change of the interleaved mapping from the BS.
19. — The method of claim 14, wherein the interleaved mapping maps the interleaving unit to a plurality of PRB bundles.
20. — The method of claim 14, wherein a PRB bundle includes the N consecutive PRBs and upper and lower boundaries of the PRB bundle differ from boundaries of PRB bundle of a carrier specific PRB bundle grid.
21. — The method of claim 14, wherein the interleaved mapping maps a plurality of interleaving units of VRBs to a plurality of PRB bundles and the method further comprises:
 — receiving a semi-static configuration indicating VRBs of one or more of the interleaving units as null RBs.
22. — The method of claim 14, further comprising:
 — receiving an indication designating one or more PRBs as null RBs;
 — receiving a small RB allocation of one or more of the null RBs; and
 — communicating with the BS according to the small RB allocation.
23. — The method of claim 14, wherein communicating with the BS comprises:
 — receiving an indication that one or more of the frequency resources are reserved frequency resources;
 — determining reserved portions of the first VRBs corresponding to the reserved frequency resources;

~~rate matching data to the first VRBs excluding the reserved portions; and~~
~~transmitting the data via the first PRBs.~~

2414. An apparatus for wireless communications, comprising:

a processor configured to:

determine a first interleaved mapping that maps a first interleaving unit of N consecutive first virtual resource blocks (VRBs) to N consecutive first physical resource blocks (PRBs), wherein each first PRB comprises a set of frequency resources during a period;

transmit a first grant allocating the first interleaving unit of first VRBs to a first user equipment (UE); and

communicate with the first UE via the first PRBs mapped to the first VRBs of the first interleaving unit; and

a memory coupled with the processor.

25. ~~An apparatus for wireless communications, comprising:~~

~~a processor configured to:~~

~~determine an interleaved mapping that maps an interleaving unit of N consecutive virtual resource blocks (VRBs) to N consecutive physical resource blocks (PRBs), wherein each PRB comprises a set of frequency resources during a period;~~

~~receive a grant allocating the interleaving unit of VRBs from a base station (BS);~~
~~and~~

~~communicate with the BS via the PRBs mapped to the VRBs of the interleaving unit; and~~

~~a memory coupled with the processor.~~