CLAIMS

1. A method of wireless communication by a user equipment (UE), comprising:

receiving at least one media-access control control element (MAC CE) including a set of activated transmission configuration indicator identifiers (TCI IDs) associated with a first set of transmission configuration indicator (TCI) states and excluding a set of deactivated TCI IDs associated with a second set of TCI state, wherein:

the set of activated TCI IDs are assigned to a plurality of codepoints which indicates values of the first set of TCI states in downlink control information (DCI); and

receiving the DCI; and

receiving downlink data channel based on at least one or more TCI states of the first set of TCI states assigned to a codepoint of a plurality of codepoints associated with the DCI.

2. The method of claim 1, further comprising configuring one or more antennas or antenna ports based on the at least one of the first set of TCI states.

3. The method of claim 1, wherein the at least one MAC CE further comprises one or more indicators to indicate mappings between one or more TCI IDs of the set of activated TCI IDs and the plurality of codepoints.

4. The method of claim 3, wherein the one or more indicators indicate whether each codepoint of the plurality of codepoints is mapped to one TCI ID of the set of activated TCI IDs or two TCI IDs of the set of activated TCI IDs.

5. The method of claim 1, wherein the set of activated TCI IDs are ordered to indicate mapping between the set of activated TCI IDs and the plurality of codepoints.

6. The method of claim 5, wherein a first activated TCI ID of the set of activated TCI IDs is assigned to the codepoint of the plurality of codepoints and a second activated TCI ID of the set of activated TCI IDs is assigned to a second codepoint of the plurality of codepoints.

7. The method of claim 5, wherein the plurality of codepoints are ordered to indicate mappings between the set of activated TCI IDs and the plurality of codepoints.

8. The method of claim 7, wherein:

the at least one MAC CE further comprises one or more indicators to indicate mappings between one or more TCI IDs of the set of activated TCI IDs and the plurality of codepoints;

a first indicator of the one or more indicators indicates a first activated TCI ID of the set of activated TCI IDs is associated with a first codepoint of the plurality of codepoints;

a second indicator of the one or more indicators indicates a second activated TCI ID of the set of activated TCI IDs is associated with a second codepoint of the plurality of codepoints;

a third indicator of the one or more indicators indicates a third activated TCI ID of the set of activated TCI IDs is associated with a third codepoint of the plurality of codepoints; and

a fourth indicator of the one or more indicators indicates a fourth activated TCI ID of the set of activated TCI IDs is associated with a fourth codepoint of the plurality of codepoints.

9. A user equipment (UE), comprising:

a memory comprising instructions;

a transceiver; and

one or more processors operatively coupled with the memory and the transceiver, the one or more processors configured to execute the instructions to:

receive, via the transceiver, at least one media-access control control element (MAC CE) including a set of activated transmission configuration indicator identifiers (TCI IDs) associated with a first set of transmission configuration indicator (TCI) states and excluding a set of deactivated TCI IDs associated with a second set of TCI state, wherein:

the set of activated TCI IDs are assigned to a plurality of codepoints which indicates values of the first set of TCI stats in downlink control information (DCI); and

receive, via the transceiver, the DCI; and

receive, via the transceiver, downlink data channel based on at least one or more TCI states of the first set of TCI states assigned to a codepoint of a plurality of codepoints associated with the DCI.

10. The UE of claim 9, wherein the one or more processors are further configured to execute the instructions to configure one or more antennas or antenna ports based on the at least one of the first set of TCI states.

11. The UE of claim 9, wherein the at least one MAC CE further comprises one or more indicators to indicate mappings between one or more TCI IDs of the set of activated TCI IDs and the plurality of codepoints.

12. The UE of claim 11, wherein the one or more indicators indicate whether each codepoint of the plurality of codepoints is mapped to one TCI ID of the set of activated TCI IDs or two TCI IDs of the set of activated TCI IDs.

13. The UE of claim 9, wherein the set of activated TCI IDs are ordered to indicate mapping between the set of activated TCI IDs and the plurality of codepoints.

14. The UE of claim 13, wherein a first activated TCI ID of the set of activated TCI IDs is assigned to the codepoint of the plurality of codepoints and a second activated TCI ID of the set of activated TCI IDs is assigned to a second codepoint of the plurality of codepoints.

15. The UE of claim 13, wherein the plurality of codepoints are ordered to indicate mappings between the set of activated TCI IDs and the plurality of codepoints.

16. The UE of claim 15, wherein:

the at least one MAC CE further comprises one or more indicators to indicate mappings between one or more TCI IDs of the set of activated TCI IDs and the plurality of codepoints;

a first indicator of the one or more indicators indicates a first activated TCI ID of the set of activated TCI IDs is associated with a first codepoint of the plurality of codepoints;

a second indicator of the one or more indicators indicates a second activated TCI ID of the set of activated TCI IDs is associated with a second codepoint of the plurality of codepoints;

a third indicator of the one or more indicators indicates a third activated TCI ID of the set of activated TCI IDs is associated with a third codepoint of the plurality of codepoints; and

a fourth indicator of the one or more indicators indicates a fourth activated TCI ID of the set of activated TCI IDs is associated with a fourth codepoint of the plurality of codepoints.

17. A user equipment (UE), comprising:

means for receiving, via the transceiver, at least one media-access control control element (MAC CE) including a set of activated transmission configuration indicator identifiers (TCI IDs) associated with a first set of transmission configuration indicator (TCI) states and excluding a set of deactivated TCI IDs associated with a second set of TCI state, wherein:

the set of activated TCI IDs are assigned to a plurality of codepoints which indicates values of the first set of TCI states in downlink control information (DCI); and

means for receiving the DCI; and

means for receiving, via the transceiver, downlink data channel based on at least one or more TCI states of the first set of TCI states assigned to a codepoint of a plurality of codepoints associated with the DCI.

18. The UE of claim 17, further comprises means for configuring one or more antennas or antenna ports based on the at least one of the first set of TCI states.

19. The UE of claim 17, wherein the at least one MAC CE further comprises one or more indicators to indicate mappings between one or more TCI IDs of the set of activated TCI IDs and the plurality of codepoints.

20. The UE of claim 19, wherein the one or more indicators indicate whether each codepoint of the plurality of codepoints is mapped to one TCI ID of the set of activated TCI IDs or two TCI IDs of the set of activated TCI IDs.

21. The UE of claim 17, wherein the set of activated TCI IDs are ordered to indicate mapping between the set of activated TCI IDs and the plurality of codepoints.

22. The UE of claim 21, wherein a first activated TCI ID of the set of activated TCI IDs is assigned to the codepoint of the plurality of codepoints and a second activated TCI ID of the set of activated TCI IDs is assigned to a second codepoint of the plurality of codepoints.

23. The UE of claim 21, wherein the plurality of codepoints are ordered to indicate mappings between the set of activated TCI IDs and the plurality of codepoints.

24. The UE of claim 23, wherein:

the at least one MAC CE further comprises one or more indicators to indicate mappings between one or more TCI IDs of the set of activated TCI IDs and the plurality of codepoints;

a first indicator of the one or more indicators indicates a first activated TCI ID of the set of activated TCI IDs is associated with a first codepoint of the plurality of codepoints;

a second indicator of the one or more indicators indicates a second activated TCI ID of the set of activated TCI IDs is associated with a second codepoint of the plurality of codepoints;

a third indicator of the one or more indicators indicates a third activated TCI ID of the set of activated TCI IDs is associated with a third codepoint of the plurality of codepoints; and

a fourth indicator of the one or more indicators indicates a fourth activated TCI ID of the set of activated TCI IDs is associated with a fourth codepoint of the plurality of codepoints.

25. A method of communication by a base station (BS), comprising:

determining a set of activated transmission configuration indicator (TCI) states wherein:

the set of activated TCI states is associated with a set of activated transmission configuration indicator identifiers (TCI IDs),

the set of activated TCI IDs are assigned to a plurality of codepoints which indicates values of the set of activated TCI states in downlink control information (DCI); and

generating at least one media-access control control element (MAC CE) including the set of activated TCI IDs and excluding a set of deactivated TCI IDs associated with a set of deactivated TCI states, wherein at least one or more TCI states of the set of activated TCI states is assigned to a codepoint of a plurality of codepoints;

transmitting the at least one MAC CE; and

transmitting the DCI.

26. The method of claim 25, wherein the set of activated TCI IDs are ordered to indicate mapping between the set of activated TCI IDs and the plurality of codepoints.

27. The method of claim 25, wherein a first activated TCI ID of the set of activated TCI IDs is assigned to the codepoint of the plurality of codepoints and a second activated TCI ID of the set of activated TCI IDs is assigned to a second codepoint of the plurality of codepoints.

28. The method of claim 25, wherein the plurality of codepoints are ordered to indicate mappings between the set of activated TCI IDs and the plurality of codepoints.

29. The method of claim 28, wherein:

the at least one MAC CE further comprises one or more indicators to indicate mappings between one or more TCI IDs of the set of activated TCI IDs and the plurality of codepoints;

a first indicator of the one or more indicators indicates a first activated TCI ID of the set of activated TCI IDs is associated with a first codepoint of the plurality of codepoints;

a second indicator of the one or more indicators indicates a second activated TCI ID of the set of activated TCI IDs is associated with a second codepoint of the plurality of codepoints;

a third indicator of the one or more indicators indicates a third activated TCI ID of the set of activated TCI IDs is associated with a third codepoint of the plurality of codepoints; and

a fourth indicator of the one or more indicators indicates a fourth activated TCI ID of the set of activated TCI IDs is associated with a fourth codepoint of the plurality of codepoints.

30. A base station (BS), comprising:

a memory comprising instructions;

a transceiver; and

one or more processors operatively coupled with the memory and the transceiver, the one or more processors configured to execute the instructions to:

determine a set of activated transmission configuration indicator (TCI) states wherein:

the set of activated TCI states is associated with a set of activated transmission configuration indicator identifiers (TCI IDs),

the set of activated TCI IDs are assigned to a plurality of codepoints which indicates values of the set of activated TCI states in downlink control information (DCI); and

generate at least one media-access control control element (MAC CE) including the set of activated TCI IDs and excluding a set of deactivated TCI IDs associated with a set of deactivated TCI states, wherein at least one or more TCI states of the set of activated TCI states is assigned to a codepoint of a plurality of codepoints;

transmit the at least one MAC CE; and

transmit the DCI.

31. The BS of claim 30, wherein the set of activated TCI IDs are ordered to indicate mapping between the set of activated TCI IDs and the plurality of codepoints.

32. The BS of claim 30, wherein a first activated TCI ID of the set of activated TCI IDs is assigned to the codepoint of the plurality of codepoints and a second activated TCI ID of the set of activated TCI IDs is assigned to a second codepoint of the plurality of codepoints.

33. The BS of claim 30, wherein the plurality of codepoints are ordered to indicate mappings between the set of activated TCI IDs and the plurality of codepoints.

34. The BS of claim 33, wherein:

the at least one MAC CE further comprises one or more indicators to indicate mappings between one or more TCI IDs of the set of activated TCI IDs and the plurality of codepoints;

a first indicator of the one or more indicators indicates a first activated TCI ID of the set of activated TCI IDs is associated with a first code point of the plurality of codepoints;

a second indicator of the one or more indicators indicates a second activated TCI ID of the set of activated TCI IDs is associated with a second code point of the plurality of codepoints;

a third indicator of the one or more indicators indicates a third activated TCI ID of the set of activated TCI IDs is associated with a third code point of the plurality of codepoints; and

a fourth indicator of the one or more indicators indicates a fourth activated TCI ID of the set of activated TCI IDs is associated with a fourth code point of the plurality of codepoints.

35. A base station (BS), comprising:

means for determining a set of activated transmission configuration indicator (TCI) states wherein:

the set of activated TCI states is associated with a set of activated transmission configuration indicator identifiers (TCI IDs),

the set of activated TCI IDs are assigned to a plurality of codepoints which indicates values of the set of activated TCI states in downlink control information (DCI); and

means for generating at least one media-access control control element (MAC CE) including the set of activated TCI IDs and excluding a set of deactivated TCI IDs associated with a set of deactivated TCI states, wherein at least one or more TCI states of the set of activated TCI states is assigned to a codepoint of a plurality of codepoints;

means for transmitting the at least one MAC CE; and

means for transmitting the DCI.

36. The method of claim 35, wherein the set of activated TCI IDs are ordered to indicate mapping between the set of activated TCI IDs and the plurality of codepoints.

37. The method of claim 35, wherein a first activated TCI ID of the set of activated TCI IDs is assigned to the codepoint of the plurality of codepoints and a second activated TCI ID of the set of activated TCI IDs is assigned to a second codepoint of the plurality of codepoints.

38. The method of claim 35, wherein the plurality of codepoints are ordered to indicate mappings between the set of activated TCI IDs and the plurality of codepoints.

39. The method of claim 38, wherein:

the at least one MAC CE further comprises one or more indicators to indicate mappings between one or more TCI IDs of the set of activated TCI IDs and the plurality of codepoints;

a first indicator of the one or more indicators indicates a first activated TCI ID of the set of activated TCI IDs is associated with a first codepoint of the plurality of codepoints;

a second indicator of the one or more indicators indicates a second activated TCI ID of the set of activated TCI IDs is associated with a second codepoint of the plurality of codepoints;

a third indicator of the one or more indicators indicates a third activated TCI ID of the set of activated TCI IDs is associated with a third codepoint of the plurality of codepoints; and

a fourth indicator of the one or more indicators indicates a fourth activated TCI ID of the set of activated TCI IDs is associated with a fourth codepoint of the plurality of codepoints.