~~CLAIMS~~

~~**What is claimed is:**~~

CLAIMS

1. A method for wireless communication at a user equipment (UE), comprising:

receiving a configuration message indicating a transmission configuration indicator (TCI) state switching pattern and a TCI state switching period, the TCI state switching period indicating a number of a plurality of transmission time intervals (TTIs), and the TCI state switching pattern indicating a TCI state for each of the plurality of TTIs;

performing~~, by the UE,~~ TCI state switching according to the TCI state switching pattern and the TCI state switching period indicated in the configuration message; and

receiving a downlink transmission during at least one of the plurality of TTIs of the TCI state switching pattern.

2. The method of claim 1, further comprising:

receiving, according to a first TCI state during a first TTI of the TCI state switching pattern, a downlink control information (DCI) signal that includes a grant of resources for the downlink transmission and an indication to switch, for a second TTI of the TCI state switching pattern, to a second TCI state different from a TCI state indicated by the TCI state switching pattern for the second TTI~~; and~~, wherein receiving the downlink transmission comprises:

~~receiving the downlink transmission comprises~~ receiving the downlink transmission according to the grant of resources at least during the second TTI according to the second TCI state.

3. The method of claim 2, wherein receiving the downlink transmission comprises:

receiving the downlink transmission according to the grant of resources during at least the first TTI according to the first TCI state and during the second TTI according to the second TCI state, wherein the downlink transmission is aggregated over at least the first TTI and the second TTI.

4. The method of claim 2, wherein the downlink transmission comprises

a single-TTI transmission.

5. The method of claim 1, wherein the TCI state switching pattern comprises a first TCI state associated with a first antenna port for each of the plurality of TTIs and a second TCI state associated with a second antenna port for each of the plurality of TTIs, and wherein receiving the downlink transmission comprises:

receiving, using the first antenna port according to the first TCI state and using the second antenna port according to the second TCI state, the downlink transmission during at least one of the plurality of TTIs of the TCI state switching pattern.

6. The method of claim 1, further comprising:

identifying a second configuration message indicating a second TCI state switching pattern and a second TCI state switching period; and

receiving a downlink control information signal according to the identified second configuration message, wherein the downlink transmission received during the at least one of the plurality of TTIs of the TCI state switching pattern comprises a downlink data transmission.

7. The method of claim 1, wherein receiving the configuration message comprises:

receiving the configuration message in radio resource control (RRC) signaling that indicates the TCI state switching pattern and the TCI state switching period.

8. The method of claim 7, wherein the configuration message in the RRC signaling further comprises an indication of an aggregation mode and an indication of a number of TTIs aggregated in a TTI aggregation period for the aggregation mode.

9. The method of claim 1, further comprising:

receiving, according to a first TCI state during a first TTI of the TCI state switching pattern, a downlink control information (DCI) signal that includes an indication to switch, for a second TTI of the TCI state switching pattern, to a second TCI state different from a TCI state indicated by the TCI state switching pattern for the second TTI;

performing TCI state switching based at least in part on the indication to switch of the received DCI signal; and

reverting, after a time duration, to performing TCI state switching according to the TCI state switching pattern.

10. The method of claim 1, further comprising:

receiving a downlink control information (DCI) signal that indicates a TCI

state table;

identifying a first set of TCI state entries in the TCI state table that correspond to TTIs that are located less than a threshold number of TTIs from the first TTI;

identifying a second set of TCI state entries in the TCI state table that correspond to TTIs that are located more than the threshold number of TTIs away from the first TTI; and

ignoring the first set of TCI state entries, wherein performing TCI state switching is based at least in part on the identified second set of TCI state entries.

11. The method of claim 1, further comprising:

receiving a downlink control information (DCI) signal that indicates a TCI state table; and

identify one or more TCI state entries in the TCI state table that correspond to TTIs that are more than a threshold number of TTIs from the first TTI, the TCI state table lacking TCI state entries corresponding to TTIs that are less than the threshold number of TTIs from the first TTI, wherein performing TCI state switching is based at least in part on the identified one or more TCI state entries.

12. The method of claim 1, wherein a number of different TCI states in the TCI state switching pattern is equal to a number of TTIs in the plurality of TTIs of the TCI state switching period.

13. The method of claim 1, further comprising:

receiving, in a first TTI according to ~~the~~a first TCI state indicated by the received configuration message, a downlink control information (DCI) signal indicating a second TCI state, the first TTI being one of a plurality of TTIs aggregated in a TTI aggregation period;

switching, responsive to the received DCI signal, to the indicated second TCI state for a second TTI of the plurality of TTIs aggregated in the TTI aggregation period; and

receiving a downlink signal in the second TTI according to the second TCI state.

~~14. The method of claim 13, wherein the received configuration further indicates a TCI state switching pattern and a TCI state switching period, the TCI state switching period indicating a number of a plurality of TTIs, and the TCI state switching pattern indicating a TCI state for each of the plurality of TTIs, including the first TCI state for the first TTI.~~

~~15.~~14. The method of claim 13, further comprising:

identifying a first set of TCI state entries in a TCI state table that is indicated by the received DCI signal, the first set of TCI state entries corresponding to TTIs that are located less than a threshold number of TTIs from the first TTI;

identifying a second set of TCI state entries in the TCI state table that correspond to TTIs that are located more than the threshold number of TTIs away from the first TTI;

ignoring the first set of TCI state entries; and

switching to the indicated second TCI state is based at least in part on the identified second set of TCI state entries.

~~16~~15. The method of claim 13, further comprising:

identifying one or more TCI state entries in a TCI state table that is indicated by the received DCI signal, ~~the~~ one or more TCI states corresponding to TTIs that are more than a threshold number of TTIs from the first TTI, and the TCI state table lacks TCI state entries corresponding to TTIs that are less than the threshold number of TTIs from the first TTI; and

switching to the indicated second TCI state is based at least in part on the identified one or more TCI state entries.

~~17~~16. The method of claim 13, further comprising:

performing, prior to receiving the DCI signal indicating the second TCI state, TCI state switching according to a first TCI state switching pattern;

performing, for a predetermined time duration, TCI state switching responsive to the received DCI signal; and

reverting, after the predetermined time duration, to performing TCI state switching according to the first TCI state switching pattern based at least in part on identifying that a second DCI signal has not been received during the predetermined time duration.

~~18~~17. A method for wireless communication at a base station, comprising:

identifying a transmission configuration indicator (TCI) state switching pattern and a TCI state switching period, the TCI state switching period indicating a number of a plurality of transmission time intervals (TTIs), and the TCI state switching pattern indicating a TCI state for each of the plurality of TTIs;

transmitting, to a user equipment (UE), a configuration message indicating the

identified TCI state switching pattern and the identified TCI state switching period; and

transmitting a downlink transmission to the UE during at least one of the plurality of TTIs according to the TCI state switching pattern and the TCI state switching period indicated in the configuration message.

~~19~~18. The method of claim ~~18~~17, further comprising:

transmitting, according to a first TCI state during a first TTI of the TCI state switching pattern, a downlink control information (DCI) signal that includes a grant of resources for the downlink transmission and an indication for the UE to switch, for a second TTI of the TCI state switching pattern, to a second TCI state different from a TCI state indicated by the TCI state switching pattern for the second TTI; and

transmitting the downlink transmission comprises transmitting the downlink transmission according to the grant of resources at least during the second TTI according to the second TCI state.

~~20~~19. The method of claim ~~19~~18, wherein transmitting the downlink transmission comprises:

transmitting the downlink transmission according to the grant of resources during at least the first TTI according to the first TCI state and during the second TTI according to the second TCI state, wherein the downlink transmission is aggregated over at least the first TTI and the second TTI.

~~21~~20. The method of claim ~~18~~17, further comprising:

identifying a second configuration message indicating a second TCI state switching pattern and a second TCI state switching period;

transmitting, to the UE, an indication of the second configuration message; and

transmitting, to the UE, a downlink control information signal according to the identified second configuration message, wherein the downlink transmission transmitted to the UE during the at least one of the plurality of TTIs according to the TCI state switching pattern and the TCI state switching period comprises a downlink data transmission.

~~22~~21. The method of claim ~~18~~17, wherein transmitting the configuration message comprises:

transmitting the configuration message in radio resource control (RRC) signaling that indicates the TCI state switching pattern and the TCI state switching period.

~~23~~22. The method of claim ~~18~~17, further comprising:

transmitting, according to a first TCI state during a first TTI of the TCI state switching pattern, a downlink control information (DCI) signal that includes an indication for the UE to switch, for a second TTI of the TCI state switching pattern, to a second TCI state different from a TCI state indicated by the TCI state switching pattern for the second TTI, and for the UE to revert, after a time duration, to performing TCI state switching according to the TCI state switching pattern.

~~24~~23. The method of claim ~~18~~17, further comprising:

transmitting a downlink control information (DCI) signal that indicates a TCI state table, the TCI state table including a first set of TCI state entries that correspond to TTIs that are located less than a threshold number of TTIs from the first TTI, and including a second set of TCI state entries that correspond to TTIs that are located more than the threshold number of TTIs away from the first TTI, the UE to ignore the first set of TCI state entries when performing TCI state switching based at least in part on the identified second set of TCI state entries.

~~25~~24. The method of claim ~~18~~17, further comprising:

transmitting a downlink control information (DCI) signal that indicates a TCI state table, one or more TCI state entries in the TCI state table corresponding to TTIs that are more than a threshold number of TTIs from the first TTI, and the TCI state table lacking TCI state entries corresponding to TTIs that are less than the threshold number of TTIs from the first TTI.

~~26~~25. The method of claim ~~20~~17, comprising:

transmitting, in a first TTI according to ~~the~~a first TCI state indicated by the transmitted configuration message, a downlink control information (DCI) signal indicating a second TCI state to which the UE is to switch, responsive to the DCI signal, for a second TTI of a plurality of TTIs aggregated in a TTI aggregation period, wherein the first TTI is one of the plurality of TTIs aggregated in the TTI aggregation period; and

transmitting a downlink signal in the second TTI.

~~27~~26. The method of claim ~~26~~25, further comprising:

identifying a first set of TCI state entries for a TCI state table, the first set of TCI state entries corresponding to TTIs that are located less than a threshold number of TTIs from the first TTI;

identifying a second set of TCI state entries for the TCI state table that correspond to TTIs that are located more than the threshold number of TTIs away from the

first TTI; and

transmitting, to the UE, an indication of the TCI state table in the DCI signal, the UE to ignore the first set of TCI state entries when switching to the indicated second TCI state based at least in part on the second set of TCI state entries.

~~28~~27. The method of claim ~~26~~25, further comprising:

identifying one or more TCI state entries for a TCI state table, ~~the~~ one or more TCI states corresponding to TTIs that are more than a threshold number of TTIs from the first TTI, the TCI state table lacking TCI state entries corresponding to TTIs that are less than the threshold number of TTIs from the first TTI; and

transmitting, to the UE, an indication of the TCI state table in the DCI signal.

~~29~~28. An apparatus for wireless communication at a user equipment (UE), comprising:

~~means for receiving~~a processor;

memory in electronic communication with the processor; and

instructions stored in the memory and executable by the processor to cause the apparatus to:

receive a configuration message indicating a transmission configuration indicator (TCI) state switching pattern and a TCI state switching period, the TCI state switching period indicating a number of a plurality of transmission time intervals (TTIs), and the TCI state switching pattern indicating a TCI state for each of the plurality of TTIs;

~~means for performing, by the UE,~~perform TCI state switching according to the TCI state switching pattern and the TCI state switching period indicated in the configuration message; and

~~means for receiving~~receive a downlink transmission during at least one of the plurality of TTIs of the TCI state switching pattern.

~~30~~29. An apparatus for wireless communication at a base station, comprising:

~~means for identifying~~a processor;

memory in electronic communication with the processor; and

instructions stored in the memory and executable by the processor to cause the apparatus to:

identify a transmission configuration indicator (TCI) state switching

pattern and a TCI state switching period, the TCI state switching period indicating a number of a plurality of transmission time intervals (TTIs), and the TCI state switching pattern indicating a TCI state for each of the plurality of TTIs;

~~means for transmitting~~transmit, to a user equipment (UE), a configuration message indicating the identified TCI state switching pattern and the identified TCI state switching period; and

~~means for transmitting~~transmit a downlink transmission to the UE during at least one of the plurality of TTIs according to the TCI state switching pattern and the TCI state switching period~~.~~ indicated in the configuration message.