

CLAIMS

1. A method of wireless communication performed by a user equipment (UE), comprising: receiving at least one of: one or more first downlink control information (DCI) transmissions, or one or more second DCI transmissions, wherein the one or more first DCI transmissions are associated with a first transmit-receive point (TRP) and a first serving cell, and the one or more second DCI transmissions are associated with a second TRP and a second serving cell, and wherein the one or more first DCI transmissions and the one or more second DCI transmissions are associated with a physical downlink control channel (PDCCH) monitoring occasion; determining one or more hybrid automatic repeat request acknowledge (HARQ-ACK) payloads, based at least in part on counter downlink assignment indicator (DAI) values and total DAI values of the one or more first DCI transmissions and the one or more second DCI transmissions; and transmitting HARQ-ACK feedback based at least in part on the one or more HARQ-ACK payloads.
2. The method of claim 1, wherein determining the one or more HARQ-ACK payloads further comprises: determining whether a DCI transmission, associated with the first TRP or the second TRP, was not received based at least in part on the counter DAI values and the total DAI values, wherein the HARQ-ACK feedback identifies whether the DCI transmission was not received.
3. The method of claim 2, wherein determining whether the DCI transmission was not received further comprises determining which TRP, of the first TRP and the second TRP, transmitted the DCI transmission based at least in part on an ordering of the first TRP and the second TRP, wherein the ordering is based at least in part on a control resource set identifier or a search space identifier of the DCI transmission.
4. The method of claim 2, wherein determining whether the DCI transmission was not received further comprises determining which TRP, of the first TRP and the second TRP, transmitted the DCI transmission based at least in part on an order of the first TRP and the second TRP, wherein the order is based at least in part on an indication, in the DCI transmission, of which TRP transmitted the DCI transmission.

5. The method of claim 1, wherein the counter DAI values indicate respective counter values of each DCI transmission transmitted by the first TRP and the second TRP on or before the PDCCH monitoring occasion.

6. The method of claim 1, wherein the total DAI values indicate a total number of DCI transmissions that have been collectively transmitted by the first TRP and the second TRP on or before the PDCCH monitoring occasion.

7. The method of claim 1, wherein the total DAI values apply across all serving cells and TRPs, of the first TRP and the second TRP, for the PDCCH monitoring occasion, and wherein the all serving cells include the first serving cell and the second serving cell.

8. The method of claim 1, wherein the total DAI values comprise respective total DAI values for the first TRP and the second TRP, and wherein the counter DAI values are maintained separately for the first TRP and the second TRP.

9. The method of claim 8, wherein the first serving cell and the second serving cell are a same serving cell, and when the UE is configured with a single serving cell, the total DAI values are not provided in the one or more first DCI transmissions and the one or more second DCI transmissions.

10. The method of claim 8, further comprising: determining which TRP, of the first TRP and the second TRP, transmitted a particular DCI transmission, of the one or more first DCI transmissions or the one or more second DCI transmissions, based at least in part on a TRP differentiation technique.

11. The method of claim 8, further comprising: determining which TRP, of the first TRP and the second TRP, transmitted a particular counter DAI value or a particular total DAI value based at least in part on a TRP differentiation technique.

12. The method of claim 1, wherein the first serving cell and the second serving cell are a same serving cell, and when the UE is configured with a single serving cell, the total DAI values are provided in the one or more first DCI transmissions and the one or more

second DCI transmissions.

13. The method of claim 1, further comprising: receiving information indicating whether the first TRP and the second TRP are associated with a joint scheduling configuration.

14. The method of claim 1, further comprising: receiving information indicating whether the HARQ-ACK feedback uses a joint HARQ-ACK payload or separate HARQ-ACK payloads for the first TRP and the second TRP.

15. The method of claim 1, wherein the first TRP and the second TRP are differentiated based at least in part on respective control resource set identifiers of the first TRP and the second TRP.

16. The method of claim 1, wherein the first serving cell and the second serving cell are a same serving cell, and wherein the first TRP and the second TRP are associated with the same serving cell.

17. An apparatus of a user equipment (UE) for wireless communication, comprising: a first interface configured to obtain at least one of: one or more first downlink control information (DCI) transmissions, or one or more second DCI transmissions, wherein the one or more first DCI transmissions are associated with a first transmit-receive point (TRP) and a first serving cell, and the one or more second DCI transmissions are associated with a second TRP and a second serving cell, and wherein the one or more first DCI transmissions and the one or more second DCI transmissions are associated with a physical downlink control channel (PDCCH) monitoring occasion; a processing system configured to determine one or more hybrid automatic repeat request acknowledge (HARQ-ACK) payloads, based at least in part on counter downlink assignment indicator (DAI) values and total DAI values of the one or more first DCI transmissions and the one or more second DCI transmissions; and a second interface configured to output HARQ-ACK feedback based at least in part on the one or more HARQ-ACK payloads.

18. The apparatus of claim 17, wherein the counter DAI values indicate respective

counter values of each DCI transmission transmitted by the first TRP and the second TRP on or before the PDCCH monitoring occasion.

19. The apparatus of claim 17, wherein the total DAI values indicate a total number of DCI transmissions that have been collectively transmitted by the first TRP and the second TRP on or before the PDCCH monitoring occasion.

20. The apparatus of claim 17, wherein the total DAI values apply across all serving cells and TRPs, of the first TRP and the second TRP, for the PDCCH monitoring occasion, and wherein the all serving cells include the first serving cell and the second serving cell.

21. The apparatus of claim 17, wherein the total DAI values include respective total DAI values for the first TRP and the second TRP, and wherein the counter DAI values are maintained separately for the first TRP and the second TRP.

22. The apparatus of claim 21, wherein the first serving cell and the second serving cell are a same serving cell, and when the UE is configured with a single serving cell, the total DAI values are not provided in the one or more first DCI transmissions and the one or more second DCI transmissions.

23. The apparatus of claim 21, wherein the processing system is further configured to: determine which TRP, of the first TRP and the second TRP, transmitted a particular DCI transmission, of the one or more first DCI transmissions or the one or more second DCI transmissions, based at least in part on a TRP differentiation technique.

24. The apparatus of claim 21, wherein the processing system is further configured to: determine which TRP, of the first TRP and the second TRP, transmitted a particular counter DAI value or a particular total DAI value based at least in part on a TRP differentiation technique.

25. The apparatus of claim 17, wherein the first interface is further configured to: obtain information indicating whether the counter DAI values and the total DAI values are based at least in part on joint counting or separate counting for the first TRP and the

second TRP.

26. An apparatus for wireless communication, comprising: means for receiving at least one of: one or more first downlink control information (DCI) transmissions, or one or more second DCI transmissions, wherein the one or more first DCI transmissions are associated with a first transmit-receive point (TRP) and a first serving cell, and the one or more second DCI transmissions are associated with a second TRP and a second serving cell, and wherein the one or more first DCI transmissions and the one or more second DCI transmissions are associated with a physical downlink control channel (PDCCH) monitoring occasion; means for determining one or more hybrid automatic repeat request acknowledge (HARQ-ACK) payloads, based at least in part on counter downlink assignment indicator (DAI) values and total DAI values of the one or more first DCI transmissions and the one or more second DCI transmissions; and means for transmitting HARQ-ACK feedback based at least in part on the one or more HARQ-ACK payloads.

27. The apparatus of claim 26, further comprising: means for determining whether a DCI transmission, associated with the first TRP or the second TRP, was not received based at least in part on the counter DAI values and the total DAI values, wherein the HARQ-ACK feedback identifies whether the DCI transmission was not received.

28. The apparatus of claim 26, wherein the total DAI values comprise respective total DAI values for the first TRP and the second TRP, and wherein the counter DAI values are maintained separately for the first TRP and the second TRP.

29. A non-transitory computer-readable medium storing one or more instructions for wireless communication, the one or more instructions comprising: one or more instructions that, when executed by one or more processors of a user equipment (UE), cause the one or more processors to: receive at least one of: one or more first downlink control information (DCI) transmissions, or one or more second DCI transmissions, wherein the one or more first DCI transmissions are associated with a first transmit-receive point (TRP) and a first serving cell, and the one or more second DCI transmissions are associated with a second TRP and a second serving cell, and wherein the one or more first DCI transmissions and the one or more second DCI transmissions

are associated with a physical downlink control channel (PDCCH) monitoring occasion; determine one or more hybrid automatic repeat request acknowledge (HARQ-ACK) payloads, based at least in part on counter downlink assignment indicator (DAI) values and total DAI values of the one or more first DCI transmissions and the one or more second DCI transmissions; and provide HARQ-ACK feedback based at least in part on the one or more HARQ-ACK payloads.

30. The non-transitory computer-readable medium of claim 29, wherein the one or more instructions, when executed by the one or more processors, cause the one or more processors to: determine whether a DCI transmission, associated with the first TRP or the second TRP, was not received based at least in part on the counter DAI values and the total DAI values, wherein the HARQ-ACK feedback identifies whether the DCI transmission was not received.