CLAIMS

1. A sharing access point, AP, configured to share at least a portion of a transmission opportunity, TXOP, with a plurality of shared APs operating under a coordination agreement within a Multi-AP, M-AP, set for participating in a coordinated transmission to one or more non-AP stations associated with the sharing AP and a plurality of further non-AP stations associated with the plurality of shared APs, wherein the sharing AP comprises:

a communication interface configured to receive completion status information frame from one or more of the plurality of shared APs, wherein the completion status information is indicative of a completion status of transmitting information related to an operation under the coordination agreement to one or more of the plurality of further non-AP stations associated with the respective shared AP; and

a processing circuitry configured, based on the completion status information frame of each of the one or more of the plurality of shared APs, to generate and maintain a data structure, wherein the data structure includes the completion status for each of the plurality of shared APs.

2. The sharing AP of claim 1, wherein the communication interface is configured to transmit the data structure to each of the plurality of shared APs.

3. The sharing AP of claim 2, wherein the communication interface is configured to transmit an Indication Status frame to the plurality of shared APs and wherein the indication frame comprises the data structure.

4. The sharing AP of claim 3, wherein the Indication Status frame further comprises a Media Access Control, MAC, address and/or an identifier of the sharing AP and/or of each of the plurality of shared APs.

5. The sharing AP of claim 3 or 4, wherein the Indication Status frame further comprises a M-AP set identifier indicative of the M-AP set.

6. The sharing AP of any one of claims 3 to 5, wherein the indication frame further comprises a coordination agreement identifier within the M-AP set, wherein the coordination agreement identifier identifies one coordination agreement of a plurality of coordination agreements within the M-AP set and wherein the sharing AP and the plurality of shared APs operate under the coordination agreement identified by the coordination agreement identifier within the M-AP set.

7. A method of operating a sharing access point, AP, configured to share at least a portion of a transmission opportunity, TXOP, with a plurality of shared APs operating under a coordination agreement within a Multi-AP, M-AP, set for participating in a coordinated transmission to one or more non-AP stations associated with the sharing AP and a plurality of further non-AP stations associated with the plurality of shared APs, wherein the method comprises:

receiving completion status information frame from one or more of the plurality of shared APs, wherein the completion status information frame is indicative of a completion status of transmitting information related

to an operation under the coordination agreement to one or more of the plurality of further non-AP stations associated with the respective shared AP; and

generating and maintaining, based on the completion status information frame of each of the one or more of the plurality of shared APs operating under the coordination agreement, a data structure, wherein the data structure indicates for each of the plurality of shared APs the completion status.

8. The method of claim 7, wherein the method further comprises transmitting one or more M-AP trigger frames to one or more of the plurality of shared APs for triggering the respective shared AP to provide the information related to an operation under the coordination agreement to the one or more further non-AP stations associated with the respective shared AP.

9. A shared access point, AP, configured to participate in a coordinated transmission to one or more non-AP stations associated with the shared AP and one or more further non-AP stations associated with a sharing AP making use of at least a portion of a transmission opportunity, TXOP, obtained and shared by the sharing AP operating under a coordination agreement within a Multi-AP, M-AP, set, wherein the shared AP comprises:

a communication interface configured to transmit information related to an operation under the coordination agreement to the one or more non-AP stations associated with the shared AP,

wherein the communication interface is further configured to transmit completion status information frame to the sharing AP, wherein the completion status information frame is indicative of a completion status of transmitting the information related to an operation under the coordination agreement to the one or more non-AP stations associated with the shared AP.

10. The shared AP of claim 9, wherein the communication interface is further configured to receive a data structure from the sharing AP, wherein the data structure indicates for the sharing AP and for each of a plurality of further shared APs operating under the coordination agreement within the M-AP set the completion status of transmitting the information related to an operation under the coordination agreement to one or more non-AP stations associated with the sharing AP or the respective further shared AP.

11. The shared AP of claim 10, wherein the communication interface is configured to receive an indication frame from the sharing AP and wherein the Indication Status frame comprises the data structure.

12. The shared AP of claim 11, wherein the Indication Status frame further comprises an address and/or an identifier of the sharing AP and/or the shared AP.

13. A method of operating a shared access point, AP, configured to participate in a coordinated transmission to one or more non-AP stations associated with the shared AP and one or more further non-AP stations associated with a sharing AP making use of at least a portion of a transmission opportunity, TXOP, obtained and shared by the sharing AP operating under a coordination agreement within a Multi-AP, M-AP, set, wherein the method comprises:

transmitting information related to an operation under the coordination agreement to the one or more non-AP stations associated with the shared AP; and

transmitting completion status information frame to the sharing AP, wherein the completion status information is indicative of a completion status of transmitting the information related to an operation under the coordination agreement to the one or more non-AP stations associated with the shared AP.

14. The method of claim 13, wherein the method further comprises receiving a M-AP trigger frame from the sharing AP and transmitting the information related to an operation under the coordination agreement to the one or more non-AP stations associated with the shared AP following the reception of the M-AP trigger frame from the sharing AP.

15. A non-access point, non-AP, station associated with a shared AP, wherein the shared AP is configured to participate in a coordinated transmission to the non-AP station associated with the shared AP and a plurality of further non-AP stations associated with the shared AP or a sharing AP making use of at least a portion of a transmission opportunity, TXOP, obtained and shared by the sharing AP operating under a coordination agreement within a Multi-AP, M-AP, set, wherein the non-AP station comprises:
a communication interface configured to receive information related to an operation under the coordination agreement from the shared AP,
wherein the communication interface is further configured to send an acknowledgment frame to the shared AP, in response to receiving the information related to an operation under the coordination agreement from the shared AP.

16. The non-AP station of claim 15, wherein the information related to an operation under the coordination agreement comprises a M-AP set identifier indicative of the M-AP set.

17. The non-AP station of claim 15 or 16, wherein the information related to an operation under the coordination agreement comprises a coordination agreement identifier within the M-AP set, wherein the coordination agreement identifier identifies one coordination agreement of a plurality of coordination agreements within the M-AP set and wherein the sharing AP and the shared AP operate under the coordination agreement identified by the coordination agreement identifier within the M-AP set.

18. The non-AP station of any one of claims 15 to 17, wherein the information related to an operation under the coordination agreement comprises a MAC address and/or an identifier of the shared AP.

19. A method of operating a non-access point, AP, station associated with a shared AP, wherein the shared AP is configured to participate in a coordinated transmission to the non-AP station associated with the shared AP and a plurality of further non-AP stations associated with the shared AP or a sharing AP making use of at least a portion of a transmission opportunity, TXOP, obtained and shared by the sharing AP operating under a coordination agreement within a Multi-AP, M-AP, set, wherein the method comprises:
receiving information related to an operation under the coordination agreement from the shared AP; and
sending an acknowledgment frame to the shared AP, in response to receiving the information related to an operation under the coordination agreement from the shared AP.

20. A computer program product comprising a computer-readable storage medium for storing program code which causes a computer or a processor to perform the method of claim 7, the method of claim 13, or the method of claim 19 when the program code is executed by the computer or the processor.

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