CLAIMS

1. A method of allocating wireless resources to a multiple basic service set identifier (BSSID) set including a number of BSSIDs each associated with a corresponding one of a number of access points (APs), the method performed by a first AP and comprising: allocating contention-based random access resources for use by stations of the multiple BSSID set using a number of association identifier (AID) values based on a group AID mapping contained in a partial virtual bitmap of a traffic indication map (TIM) element; and transmitting one or more trigger frames to the stations of the multiple BSSID set, each trigger frame of the one or more trigger frames containing at least one AID value of the number of AID values based on the group AID mapping, wherein the at least one AID value identifies a corresponding BSSID of the number of BSSIDs in the BSSID set.

2. The method of claim 1, wherein each trigger frame of the one or more trigger frames solicits uplink (UL) transmissions from stations on the allocated contention-based random access resources based on the at least one AID value of the number of AID values.

3. The method of claim 1, wherein the at least one AID value of the number of AID values contained in each trigger frame identifies, for the allocation of the contention-based random access resources, at least one of a group of stations, a specific BSSID, a group of BSSIDs, or all of the stations belonging to the multiple BSSID set.

4. The method of claim 1, wherein the first AP is associated with a transmitted BSSID (Tx BSSID), and each of the other APs is associated with a corresponding non-transmitted BSSID (non-Tx BSSID).

5. The method of claim 4, wherein allocating the contention-based random access resources comprises: allocating one or more contention-based random access resource units (RUs) for use by stations associated with a selected one of the non-Tx BSSIDs by setting an AID value to a BSSID index of the selected non-Tx BSSID, wherein at least one trigger frame of the one or more trigger frames contains the AID value set to the BSSID index of the selected non-Tx BSSID and allocates the one or more contention-based random access RUs for use by stations associated with the selected non-Tx BSSID for uplink (UL) transmissions.

6. The method of claim 4, wherein allocating the contention-based random access resources comprises: allocating one or more contention-based random access resource units (RUs) for use by stations associated with the Tx BSSID by setting an AID value to zero, wherein at least one trigger frame of the one or more trigger frames contains the AID value set to zero and allocates the one or more contention-based random access RUs for use by stations associated with the Tx BSSID for uplink (UL) transmissions.

7. The method of claim 4, wherein allocating the contention-based random access resources comprises: allocating one or more contention-based random access resource units (RUs) to all

unassociated stations set by setting an AID value to 2045, wherein at least one trigger frame of the one or more trigger frames contains the AID value set to 2045 and allocates the one or more contention-based random access RUs to all of the unassociated stations for uplink (UL) transmissions.

8. The method of claim 4, further comprising: transmitting a management frame including the partial virtual bitmap containing the group AID mapping.

9. The method of claim 8, wherein the partial virtual bitmap indicates at least one of: a presence of group address traffic for the Tx BSSID; a presence of group address traffic for one or more of the non-Tx BSSIDs; or a presence of queued downlink (DL) data for unassociated stations.

10. The method of claim 8, wherein the management frame includes a multiple BSSID element comprising: an indication that the first AP operates the multiple BSSID set and is associated with the Tx BSSID; and BSSID values assigned to the Tx BSSID and the non-Tx BSSIDs.

11. The method of claim 8, wherein the management frame includes a random access parameter (RAPS) element indicating orthogonal frequency-division multiple access (OFDMA) contention window values for stations associated with the first AP.

12. The method of claim 11, wherein the management frame includes, for each of the other APs, a corresponding RAPS element indicating OFDMA contention window values for stations associated with the respective one of the other APs.

13. The method of claim 12, wherein a RAPS element having a length field set to 1 indicates that a corresponding BSSID does not allocate random access RUs.

14. The method of claim 12, wherein the OFDMA contention window values are based, at least in part, on the number of stations associated with the first AP.

15. The method of claim 1, wherein the first AP is associated with a non-transmitted BSSID (non-Tx BSSID), and allocating the contention-based random access resources comprises: allocating one or more contention-based random access resource units (RUs) for use by stations associated with the non-Tx BSSID by setting an AID value to zero, wherein at least one trigger frame of the one or more trigger frames contains the AID value set to zero and allocates the one or more contention-based random access RUs for use by stations associated with the non-Tx BSSID for uplink (UL) transmissions.

16. The method of claim 1, wherein each of the number of APs comprises a virtual access point.

17. A first access point (AP) configured to allocate wireless resources to a multiple basic service set identifier (BSSID) set including a number of BSSIDs each associated with a corresponding one of a number of APs, the first AP comprising: one or more processors; and a memory storing

instructions that, when executed by the one or more processors, cause the first AP to: allocate contention-based random access resources for use by stations of the multiple BSSID set using a number of association identifier (AID) values based on a group AID mapping contained in a partial virtual bitmap of a traffic indication map (TIM) element; and transmit one or more trigger frames to the stations of the multiple BSSID set, each trigger frame of the one or more trigger frames containing at least one AID value of the number of AID values based on the group AID mapping, wherein the at least one AID value identifies a corresponding BSSID of the number of BSSIDs in the BSSID set.

18. The first AP of claim 17, wherein the at least one AID value of the number of AID values contained in each trigger frame identifies, for the allocation of the contention-based random access resources, at least one of a group of stations, a specific BSSID, a group of BSSIDs, or all of the stations belonging to the multiple BSSID set.

19. The first AP of claim 17, wherein the first AP is associated with a transmitted BSSID (Tx BSSID), and each of the other APs is associated with a corresponding non-transmitted BSSID (non-Tx BSSID).

20. The first AP of claim 19, wherein execution of the instructions for allocating the contention-based random access resources causes the first AP to: allocate one or more contention-based random access resource units (RUs) for use by stations associated with a selected one of the non-Tx BSSIDs by setting an AID value to a BSSID index of the selected non-Tx BSSID, wherein at least one trigger frame of the one or more trigger frames contains the AID value set to the BSSID index of the selected non-Tx BSSID and allocates the one or more contention-based random access RUs for use by stations associated with the selected non-Tx BSSID for uplink (UL) transmissions.

21. The first AP of claim 19, wherein execution of the instructions for allocating the contention-based random access resources causes the first AP to: allocate one or more contention-based random access resource units (RUs) for use by stations associated with the Tx BSSID by setting an AID value to zero, wherein at least one trigger frame of the one or more trigger frames contains the AID value set to zero and allocates the one or more contention-based random access RUs for use by stations associated with the Tx BSSID for uplink (UL) transmissions.

22. The first AP of claim 21, wherein execution of the instructions to allocate the contention-based random access resources causes the first AP to: allocate one or more contention-based random access resource units (RUs) to all unassociated stations set by setting an AID value to 2045, wherein at least one trigger frame of the one or more trigger frames contains the AID value set to 2045 and allocates the one or more contention-based random access RUs to all of the unassociated stations for uplink (UL) transmissions.

23. The first AP of claim 21, wherein execution of the instructions further causes the first AP to: transmit a management frame including the partial virtual bitmap containing the group AID

mapping, wherein the partial virtual bitmap indicates at least one of: a presence of group address traffic for the Tx BSSID; a presence of group address traffic for one or more of the non-Tx BSSIDs; or a presence of queued downlink (DL) data for unassociated stations.

24. The first AP of claim 23, wherein the management frame includes a multiple BSSID element comprising: an indication that the first AP operates the multiple BSSID set and is associated with the Tx BSSID; and BSSID values assigned to the Tx BSSID and the non-Tx BSSIDs.

25. The first AP of claim 24, wherein the management frame includes: a contention-based random access parameter (RAPS) element indicating orthogonal frequency-division multiple access (OFDMA) contention window values for stations associated with the first AP; and for each of the other APs, a corresponding RAPS element indicating OFDMA contention window values for stations associated with the respective one of the other APs.

26. The first AP of claim 17, wherein the first AP is associated with a non-transmitted BSSID (non-Tx BSSID), and wherein execution of the instructions to allocate the contention-based random access resources causes the first AP to: allocate one or more contention-based random access resource units (RUs) for use by stations associated with the non-Tx BSSID by setting an AID value to zero, wherein at least one trigger frame of the one or more trigger frames contains the AID value set to zero and allocates the one or more contention-based random access RUs for use by stations associated with the non-Tx BSSID for uplink (UL) transmissions.

27. A first access point (AP) configured to allocate wireless resources to a multiple basic service set identifier (BSSID) set including a transmitted BSSID (Tx BSSID) and a number of non-transmitted BSSIDs (non-Tx BSSIDs), the Tx BSSID associated with the first AP and each of the non-Tx BSSIDs associated with a corresponding one of a number of other APs, the first AP comprising: means for allocating contention-based random access resources for use by stations of the multiple BSSID set using a number of association identifier (AID) values based on a group AID mapping contained in a partial virtual bitmap of a traffic indication map (TIM) element; and means for transmitting one or more trigger frames to the stations of the multiple BSSID set, each trigger frame of the one or more trigger frames containing at least one AID value of the number of AID values based on the group AID mapping, wherein the at least one AID value identifies a corresponding BSSID of the number of BSSIDs in the BSSID set.