IEEE P802.11
Wireless LANs

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| Resolution to RevMC SB CID 5596 |
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Abstract

This document proposes a resolution to RevMc sponsor ballot comment 5596

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| 5996 | 9.38.5.3 | "... In the Dynamic Allocation Info field of the Grant frame, the AllocationType field shall be set to indicate SP, ..."Allocation of type SP is irrelevant within BI with CBAP only subfield of DMG Parameters filed set to 1. Current definition does no distinguish between scheduled DTI and entire DTI of CBAP access. The definition may be seeing as applicable for BI with CBAP only subfield of DMG Parameters filed set to 0, still relevant reference is needed. There is no solution defined to support BI with CBAP only subfield of DMG Parameters filed set to 1. | Will be provided in a separate document |

Discussion:

There are two cases in which a PCP and STA perform beamforming training using BTI/A-BFT: before association and after association. The purpose of subclause 9.38.5.3 is to define the methods in which this beamforming continues (with BRP) after the BTI/A-BFT. Beamforming training needs to continue because BTI/A-BFT beamforming training provide only TX training.

The time between beacons (DTI) can be allocated as CBAP only (CBAP only field set to 1). In this case both the initiator (The PCP) and the responder (STA) can start BRP using a BRP frame or a grant frame. Unassociated STAs can use this time for BF training.

If the DTI is not CBAP only the initiator (PCP) may allocate a service period (SP) for beamforming with the STA or an addressed CBAP between the PCP and the responder. Unaddressed CBAPs can be used for BF training as above – even for unassociated STAs. However unassocated STAs can use only unaddressed CBAPs or get allocated a SP or addressed CBAP in the ATI.

The text describes allocation of time for BRP execuation using a grant frame. This does not work for unassocated STAs. We propose to allow unassocated STAs to continue BF training in a non-CBAP only DTI using an announce frame or by using CBAPs announced in the beacon.

***Editor: modify P1553L14-32 in 9.38.5.3 as follow:***

To schedule time in the DTI for BRP execution with a responder, the initiator may use any of the following methods:

1. Allocate an SP with the Beamforming Training subfield set to 1 in the Allocation field within an Extended Schedule element. The source of the SP shall be the initiator and the destination the responder. The Extended Schedule element is carried in DMG Beacon or Announce frames, as defined in 9.36.4 (DTI transmission rules). The source AID of the allocation shall be set to the AID of the initiator and the destination AID to the AID to the AID of the responder
2. Allocate a CBAP in which the initiator or responder may start beamforming training with each other. The CBAP allocation is announced in an Extended Schedule element carried in a DMG Beacon or an Announce frame, as defined in 9.36.4 (DTI transmission rules). The source AID of the CBAP shall be set to the AID of the initiator or to the broadcast AID if the responder is not associated with the initiator. The destination AID of the CBAP may be set to the AID of the responder or to the broadcast AID if the responder is not associated with the initiator.
3. Use a Grant frame to allocate either a CBAP or an SP in which the initiator or responder may start beamforming with each other. In the Grant frame, the initiator shall set the RA field to the MAC address of the responder and the TA field to the MAC address of the initiator. In the Dynamic Allocation Info field of the Grant frame, the AllocationType field shall be set to indicate SP, the source AID field shall be set to the AID of the initiator, the destination AID field shall be set to the broadcast AID and the Allocation Duration field shall be set to the expected duration of the BRP phase.
4. Allocate a DTI as CBAP only as defined in 9.36.4 (DTI transmission rules).

At least one of the above allocations shall occur during one of the following aMinBTIPeriod beacon intervals beginning with the beacon interval in which the SLS phase with the responder was last completed.

The duration of the allocation, as specified in the Allocation Block Duration (see 8.4.2.13, Extended Schedule Element), shall cover at least the expected duration of the BRP phase.

If the initiator receives at least one SSW frame from a responder within an A-BFT but did not transmit an SSW-Feedback frame to the responder within that A-BFT, the initiator may schedule time in the DTI for the responder to complete the RSS. To do that, the initiator may use one of the methods above. The Allocation Block Duration field shall be set to cover for at least the remaining duration of the RSS.

**References:**