IEEE P802.11
Wireless LANs

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| Sponsor ballot text changes part 3 |
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Abstract

This document addresses comments provided to the draft D5.0 sponsor ballot CID 6001 and 6015

*Discussion: It is just defined in “10.1.3.2b DBand Beacon generation before network initialization” at P359L3 that “…the STA shall set the A-BFT Length field to a value greater than 0 and the Next A-BFT field to 0”, but the rule is not reflected in “10.1.4.3.3 Active scanning procedure” that defines beamforming training during active scanning. Suggest changing at P365L30 to make it clear that the A-BFT shall be used during active scanning.*

*Editor: change at P365L30*

d) If a DBand Beacon frame with the Discovery Mode field equal to 1 is received, perform beamforming training with the peer STA as defined in 9.35.5;

*Editor: add paragraph at P141L35*

NOTE – In the DBand, a value of 0 in the Beacon Interval field indicates that the TBTT of the next BTI is unknown.

*Editor: Change text in 10.28.1 Beamformed Link Maintenance*

*Editor*: *append to the previous paragraph at P415L24*

The Beam Link Maintenance Timer shall be halted during periods of time when any of the DBand STAs involved in the Beamformed Link are in Doze state.

*Editor*: *change text at P416L9*

To prevent expiration of the Beam Link Maintenance Timer when a DBand STA does not have MSDUs to send, the DBand STA shall transmit QoS null frames to maintain a beamformed link.

*Editor: add new figure at end of the subclause 10.28.1*



**Figure xyz Example of Beamformed Link Maintenance**

*Editor: add new paragraph at P329L15*

A DBand STA should configure its receive antenna to a quasi-omni pattern if, while in receiving mode, the DBand STA receives an ScS frame in the current allocation and the value of the TA field of the received ScS frame is equal to the address of a peer STA that the DBand STA is currently engaged in communication.

*Discussion: There are couple of definitions in relation to the CBAP allocation and access rules that need clarification*

*10.4.1, 10.4.14 and 10.4.8 definitions mean that in the CBAP with unicast Source AID only the STA that creates P2P TSPEC and has AID equal to the CBAP Source AID is allowed to transmit and other STA with other AID is not allowed to transmit during the CBAP.*

*In the same time there are no rules about CBAP access of the STAs that didn’t created TSPEC.*

*I think that it is important that CBAP allocation can be used without any additional communications between STAs from one side and from the other side the STAs that have established P2P TSPEC don’t need to have access rules different from the STAs that didn’t established the P2P TSPEC.*

*I propose to extend the CBAP access rules provided for TS to cover CBAP access out of TS*

*8.4.2.134 It is not clear what is the normative behavior of the STA with Source AID “initiating” channel access during CBAP.*

*There are different cases of CBAP in the normative text: 1. CBAP only, 2. CBAP allocation with Source AID equal to some STA AID and Destination AID equal to Broadcast AID, and 3. CBAP allocation with Source AID equal to Broadcast AID and Destination AID equal to Broadcast AID. As it is explained above only in the cases 1) and 3) multiple should be allowed. In the case 2) only one STA that has the AID equal to Source AID is permitted to transmit. Hence there is no need for random backoff in the case 2).*

*Resolution:*

*Propose to harmonize the normative text by introducing following changes:*

*In the section 9.33.5*

* *separate access rules of the mentioned cases*
* *provide clarification that in the cases 1) and 3) a multiple access for all STAs even not associated is allowed as defined in 9.19.2 (EDCA)*
* *Provide clarification that in the case 2) only STA with AID equal to the Source AID is permitted to transmit. Add rule that the STA uses PIFS to gain priority access to the medium. Add this case to the section 9.3.2.3.4 PIFS.*
* *add new CBAP allocation case: the Source AID is equal to Source STA AID and the Destination AID is equal to Destination STA AID. Define rule that only those STA are allowed to transmit during the CBA. Link access of the Source STA is as per c) and link access the Destination STA is as per b).*

*Change the paragraph at P139L19 as follows*

The CBAP Source field is valid only if the CBAP Only field is set to 1. The CBAP Source field is set to 1 to indicate that the PCP/AP has higher priority to initiate transmissions during the CBAP than non-PCP/non-AP STAs. The CBAP Source field is set to 0 otherwise..

*Change the two paragraphs starting at P171L19 as follows*

The Source AID field is set to the AID of the STA that initiates channel access during the SP or CBAP allocation or, in the case of a CBAP allocation, can also be set to the broadcast AID if all STAs are allowed to initiate transmissions during the CBAP allocation.

The Destination AID field indicates the AID of a STA that is expected to communicate with the source DBand STA during the allocation or broadcast AID if all STAs are expected to communicate with the source DBand STA during the allocation. The broadcast AID asserted in the Source AID and the Destination AID fields for an SP allocation indicates that during the SP a non-PCP/non-AP STA does not transmit unless it receives a Poll or Grant frame from the PCP/AP.

**9.33.4 DTT transmission rules**

*Editor: delete the third paragraph that starts with* “When the entire DTT is allocated to CBAP if the CBAP Only field is 1 and the CBAP Source…”

*Editor: Change the text at P277L13*

**9.33.6.3 Contention-based access period (CBAP) allocation**

The PCP/AP shall set the AllocationType subfield to 1, the Source AID subfield to the broadcast AID or to the AID of the source of the CBAP, and the Destination AID subfield to the broadcast AID or to the AID of the destination of the CBAP in an Allocation field within an Extended Schedule element to indicate a CBAP allocation.

**9.33.5 Contention-based access period (CBAP) transmission rules**

The definition of contention-based transmission rules used within a CBAP is provided in section 9.3 DCF and in section 9.19 HCF. This subclause specifies additional rules applicable to the CBAP.

*Editor: insert the following paragraphs after the first paragraph*

A STA shall not transmit within a CBAP unless at least one of the following conditions is met:

* The value of the CBAP Only field is equal to 1 and the value of the CBAP Source field is equal to 0 within the DBand Parameters field of the DBand Beacon that allocates the CBAP
* The STA performs in the role of PCP/AP and the value of the CBAP Only field is equal to 1 and the value of the CBAP Source field is equal to 1 within the DBand Parameters field of the DBand Beacon that allocates the CBAP
* The value of the Source AID field of the CBAP is equal to the broadcast AID
* The STA’s AID is equal to the value of the Source AID field of the CBAP
* The STA’s AID is equal to the value of the Destination AID field of the CBAP

If a STA’s AID is equal to the value of the Source AID field of a CBAP or if a STA performs in the role of PCP/AP and both the CBAP Only and CBAP Source fields are equal to 1 in the DBand Beacon that allocates a CBAP, the STA may initiate a frame transmission within the CBAP immediately following when the medium is determined to be idle for one PIFS period.

*Editor: Change the text in the basic spec*

**9.3.2.3.4 PIFS**

* An HT STA performing clear channel assessment (CCA) in the secondary channel before transmitting a 40 MHz mask PPDU using EDCA channel access as described in 10.15.9 (STA CCA sensing in a 20/40 MHz BSS)
* An DBand STA performing EDCA access during an allocated CBAP as described in 9.33.5 (Contention-based access period (CBAP) transmission rules)

*Editor: Change the text at P406L44*

**10.4.14 PTP TS Operation**

A TS with EDCA access policy does not need to be added to any CBAP allocation, and can use any CBAP allocation as long as the source AID of the CBAP allocation matches the source AID of the TS or the source AID of the CBAP allocation is equal to the broadcast AID or the destination AID of the CBAP matches the destination AID of the TS.

*Editor: Change the text at P401L35*

**10.4.8 Data Transfer**

In the DBand, MSDUs are transmitted using QoS data frames. During the CBAP, the MAC delivers MSDUs based on the priority of the transmitted QoS data frames. The MAC can transmit all MSDUs having a TSID with an associated TSPEC with an access policy of EDCA or SEMM, provided that the source AID of the CBAP allocation is equal to the source AID of the TS or the source AID of the CBAP allocation is equal to broadcast AID or the destination AID of the CBAP matches the destination AID of the TS.

*Editor: Change the text at P395L19*

**10.4.1 Introduction**

- the TS has an access policy of EDCA, where it can use all CBAP allocations with Source AID equal to the broadcast AID and all CBAP allocations with Source AID matching the source STA of the TS and all CBAP allocations with Destination AID matching the destination STA of the TS; or

- the TS has an access policy of SEMM, where it can use exactly one SP allocation, as well as all CBAP allocations with Source AID equal to the broadcast AID and all CBAP allocations with Source AID matching the source STA of the TS and all CBAP allocations with Destination AID matching the destination STA of the TS.

*Editor: Change the text at P45L26*

**4.3.17 DBand STA**

Certain DBand features such as service period allocation are available only to DBand STAs that are associated with an AP or with a PCP, while other DBand features such as EDCA operation in a PBSS do not require association.

*Editor: Insert the following Annex*

# Annex Z

**(informative)**

**TSPEC aggregation in the DBand**

Examples of TSPEC aggregation include but are not limited to:

* Traffic Streams between two DBand STAs A and B, having an access policy of SPCA, even if they flow in opposite directions, sharing an SP allocation created with A as Source AID and B as Destination AID
* Traffic Streams between DBand STA A and other DBand STAs, having an access policy of EDCA, even if they flow in opposite directions (some having STA A as source and some having STA A as destination), sharing a CBAP allocation created with A as Source AID and broadcast Destination AID.

Figure 188 and Figure 189 show examples of TSPEC aggregation in the DBand. Note that TSPEC 3 in Figure 188 (for both SPCA and EDCA cases) can flow only through an RD grant.

Figure 188 Example of TSPEC aggregation (SPCA and EDCA access policies)

Figure 189 Example of TSPEC aggregation (SPCA, EDCA and SEMM access policies)

*Editor: at P373L35 append to the last paragraph*

During an Awake BI, a non-PCP/non-AP STA that has not set up a wakeup schedule with the PCP/AP and that is in PS mode shall be awake during any allocated CBAP for which the STA is the source DBand STA or destination DBand STA, or the source AID of the CBAP is equal to the broadcast AID or the destination AID of the CBAP is equal to the broadcast AID.

*Discussion: There are lot of fields delivered by DBand beacon that are not included in BSSDescription of the MLME-SCAN.confirm*

*Editor: at P56L10 add all fields of the DBand beacon to the BSSDescription of the MLME-SCAN.confirm*

**References:**