IEEE P802.11  
Wireless LANs

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| TDD Slot timing CID resolution | | | | |
| Date: 2019-April-08 | | | | |
| Author(s): | | | | |
| Name | Company | Address | Phone | email |
| Solomon Trainin | Qualcomm |  | 972547885738 | [strainin@qti.qualcomm.com](mailto:strainin@qti.qualcomm.com) |
| Alecsander Eitan | Qualcomm |  |  | [eitana@qti.qualcomm.com](mailto:eitana@qti.qualcomm.com) |
| Assaf Kasher | Qualcomm |  |  | [akasher@qti.qualcomm.com](mailto:akasher@qti.qualcomm.com) |
| Carlos Cordeiro | Intel |  |  | [carlos.cordeiro@intel.com](mailto:carlos.cordeiro@intel.com) |
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Abstract

Resolution of CIDs: 4055, 4059, 4072, 4145, 4264, 4265, 4274, 4300, 4347, 4349, 4353, 4354, 4355, 4356, 4364, 4371, 4385, 4391, 4393, 4394, 4429

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| **CID** | **Clause Number(C)** | **Page** | **Comment** | **Proposed Change** | **Resolution** | **Comment Group** |
| 4055 | 9.4.2.270 | 178.18 | The field "Requested TX Percentage" staes is percentage but not percentage from what. | Add text to define percentage from what. | **Revised.**  Append to the sentence:  The Requested TX Percentage field indicates the requested transmit percentage of airtime from the non-AP and non-PCP STA to the AP or PCP in relation to the airtime occupied by the bidirectional traffic of the STA with the AP or PCP. | TDD scheduling |
| 4059 | 9.4.2.267 | 161.01 | Table 23 defines "N/A; TDD slot unassigned" and "N/A; Unavailable" look the same but they are not. Text should explain what each means. | Add text to explain each | **Revised**  **Discussion:**  The common part of unassigned and unavailable is “A STA shall not transmit in an unassigned TDD slot or an unavailable TDD slot.” It is specifically mentioned that the non-AP/non-PCP STA may indicate a TDD slot an unavailable TDD slot for that STA. The non-AP STA doze in the unassigned TDD slot.  ***Propose to add reference to the normative text that defines the permissions***  ***TGay editor:***  ***In the Table 23 —Bitmap and Access Type Schedule field encoding remove “N/A”***  ***P160L22***  … access permission of the TDD slot as specified in Table 23. See 10.40.6.2.2 SP with TDD channel access and 11.2.7 Power management in a PBSS and DMG infrastructure BSS for normative behaviour. | TDD scheduling |
| 4072 | 10.40.6.2.2 | 244.16 | The statement: "When an AP or PCP receives a TDD Slot Schedule element from a STA that indicates a TDD slot is an unavailable TDD slot for that STA, the AP or PCP shall not schedule any transmission or reception in this TDD slot for that STA." It is clear that it should not transmit, by why reception is forbiden? It should not be. | Remove the "or reception". | **Reject**  It is correct to specify that the AP “shall not schedule … reception in this TDD slot for that STA.” because the AP is responsible for TX and RX permission in the TDD slot | TDD channel access |
| 4145 | 10.40.6.2.2 | 243.18 | "a DMG STA shall not transmit during a TDD SP unlessa DMG STA shall not transmit during a TDD SP unless it receives a TDD Slot Schedule element". I believe a PCP/AP does not need to receive the element to transmmit | replace "a DMG STA" with "a non PCP/AP DMG STA" | **Reject**  The general statement is correct. Any STA shall get the element. It may receive it from the SME and/or OTA from the AP in case of non-AP STA | TDD channel access |
| 4264 | 10.40.6.2.2 | 244.24 | "In a Basic TDD slot the transmission of TDD SSW Feedback frames shall have the highest priority"  For TDD BF without active link, the exact time to send TDD SSW feedabck is based on eq(3) and it has nothing to do with high priority | suggest change to "In a Basic TDD slot the transmission of TDD SSW Feedback frames for TDD beamforing with active link shall have the highest priority" | **Reject**  There is no such an active link defined. The equation 3 is not related to the schedule that allocates the Basic TDD slots. The discussed rule belongs to the different case of beamforming under regular scheduling in parallel to the data traffic. No changes needed. | TDD channel access |
| 4265 | 10.40.6.2.2 | 244.30 | Can DL MU-MIMO be used in TDD SP? It seems not possible because RDP is not allowed. But the block ack schedule frame is not included in the control frame list | add Block Ack Schedule in the list | **Accept** | TDD channel access |
| 4274 | 10.40.6.2.2 | 243.22 | "conveyed through an MLME-TDD-SLOT-SCHEDULE.request primitive" but this primitive is not described in 11.53.4. It is using MLME-TDD\_SLOT-ANNOUNCE primitives instead | remove "conveyed through an MLME-TDD-SLOT-SCHEDULE.request primitive" | **Accept**  Despite the mentioned primitive is described in the 11.53.4, see Figure 166, the subclause 10.40.6.2.2 does not define the specific use of primitives. So, it is fine to remove the primitive | TDD channel access |
| 4347 | 4.95 | 25.24 | Section does not explain well why co-channel coordinated management entity is needed, what problems it aim to solve or what is the additional functionality it provides. why sharing the antenna is needed etc... | Please Clarify | **Reject**  The purpose of reference models is to provide high level model to be used in other clauses of the standard like 10 and 11. This reference model is used in 11.53 and in 10.40.6.2.2.as referred in the subclause. The subclause is also referred in 11.53.1 General | CME |
| 4349 | 4.95 | 26.00 | Figure 1, It is unclear where are the MLME-SAP and PLME SAP interfaces | Indicate the SME interfaces in the figure | **Reject**  The Figure 1 follows the convention established in the subclause 4.9 of presenting the SME interfaces, see for example Figure 4-28 and Figure 4-29 | CME |
| 4353 | 6.3.121.2.3 | 65.08 | "This primitive is generated by the SME to establish a TDD slot structure in its MAC" What does it mean to "establish slot structure in its MAC"? | Consider to change "Primitive provides the STA the TDD Network stricture parameters. | **Revised**  ***P65L8***  ***Replace by*** “This primitive is generated by the SME at any time when the TDD slot structure is to be set in the MAC entity.  **P66L19**  ***Replace by*** “This primitive is generated by the SME at any time when the TDD slot schedule is to be set in the MAC entity.” | TDD scheduling |
| 4354 | 6.3.121.2.4 6.3.121.4.3 6.3.121.4.4 6.3.121.5.3 6. | 65.10 | "This request initiates TDD slot structure establishment"  What is the definition of "TDD slot structure establishment" ? | Change to "STA MAC Sublayer is configured with the new TDD Slot Structure parameters" | **Revised**  ***P65L10***  ***Replace the sentence by***  If the parameters of the TDD slot structure element are not changed receipt of this primitive shall have no effect. Otherwise, receipt of this primitive causes the MAC to apply the parameters of the primitive as defined in 10.40.6.2.2.  ***P66L21***  ***Replace the sentence by***  If the parameters of the TDD slot schedule element are not changed receipt of this primitive shall have no effect. Otherwise, receipt of this primitive causes the MAC to apply the parameters of the primitive as defined in 10.40.6.2.2. | TDD scheduling |
| 4355 | 6.3.121.3.3 6.3.121.5.1 | 66.02 | "This primitive is generated by the MLME to report the result of TDD slot structure establishment in the MAC entity of AP or PCP."  What is the action performed due to the reception of the primitive request and how what are the action result options? | consider to change the primitive to acknowledge only and not confirm and change according to the following:  "This primitive is generated by the MLME to acknowledge the reception of the TDD slot structure by the MAC entity." | **Revised**  **Discussion:** both primitives MLME-TDD-SLOT-STRUCTURE.request and MLME-TDD-SLOT-SCHEDULE.request contain the Start Time subfield that indicates the time when the relevant structure or schedule takes effect. Intention of the confirm primitive is to signal that the new parameters of the request primitive take effect.  ***P66L02***  ***Replace the sentence by***  This primitive is generated by the MLME to report that the TDD slot structure takes effect in the MAC entity of AP or PCP.  ***P67L014***  ***Replace the sentence by***  This primitive is generated by the MLME to report that the TDD slot schedule takes effect in the MAC entity. | TDD scheduling |
| 4356 | 6.3.121.2.2 6.3.121.4.2 | 65.05 | Why STAAddress parameter is needed? MLME primitives doesn't include only the PeerSTAAddress of the recipient STA and not the MLME MAC Address | Consider to remove from the primitive parameters | **Reject**  The STAAddress indicates the MAC entity in case the primitive is issued by the co-channel coordinated management SME. | TDD scheduling |
| 4364 | 9.6.31 | 198.21 | the frame name "Protected Dual of Unprotected DMG Action" is ambiguous (protected of unprotected!?) | change name | **Reject**  The name precisely represents the relationship between the categories.  See for example “Protected Dual of Public Action” | Security |
| 4371 | 6.3.121 | 64.16 | Section name "TDD schedule" is not accurate, change to "TDD structure and Schedule" | As in comment | **Accept** | TDD scheduling |
| 4385 | 9.3.4.2 | 95.07 | Add dot11EDMGTDD Option Implemented MIB variable and include TDD Slot Structure and TDD Slot Schedule in Beacon only if MIB is true | As in comment | **Accept** | MIB |
| 4391 | 10.40.6.2.2 | 244.09 | "In a simplex TDD slot that has the Bitmap and Access Type Schedule field for the STA equal to TX, the STA shall initiate transmissions addressed to the peer STA assigned to the TDD slot at the start of the TDD slot."  STA may not transmit if its TX Queue is empty | Change to:  "In a simplex TDD slot that has the Bitmap and Access Type Schedule field for the STA equal to TX, the STA may initiate transmissions addressed to the peer STA assigned to the TDD slot at the start of the TDD slot." | **Reject**  The comment does not provide a reason to replace “shall” by “may”. Starting transmission in predicted time makes a lot of sense for the TDD access. It is always possible to send QoS Null if no data in the queue | TDD channel access |
| 4393 | 10.40.6.2.2 | 246.28 | Why NOTE in line 28 is stated, it is not related to the normative text | Remove the NOTE or place it in other location | **Revised**  Agree to remove | TDD channel access |
| 4394 | 10.40.6.2.2 | 246.25 | Normative doesn't indicate which STA parameters it relate to ? Need to indicate it | Transmissions shall be confined to the channel number indicated by the primary channel, the channels indicated in the EDMG Operation element, and the channels indicated in the EDMG Capabilities element of the AP or PCP | **Reject**  No change needed. The general sentences are fine and the relation with the capabilities of the non-AP STA is presented in the following text | TDD channel access |
| 4429 | 9.2.5 | 811.21 | There is no rule presented of Duration/ID field setting in frames sent within the TDD slot. | In reference to (IEEE P802.11-REVmd/D2.1, February 2019) P816L31 Append new sub clause after 9.2.5.8 Setting for other response frames 9.2.5.9 Setting within TDD slot Within the TDD slot the Duration/ID field is set to, use the notation in Table 9-9--Duration/ID field encoding: Bits 0-13 set to 0, Bit14 and Bit 15 set to 1, Usage set to In the simplex TDD slot | ***Revised***  ***Append at end of the subclause 10.40.6.2.2:***  The Duration field in the frames sent in the SP with TDD channel access shall be set as follows: bits 0-13 set to 0, and bit 14 and bit 15 set to 1. | TDD channel access |

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| **CID** | **Clause Number(C)** | **Page** | **Comment** | **Proposed Change** | **Resolution** | **Comment Group** |
| 4300 | 9.4.2.267 | 159.18 | TDD Slot Structure element can be sent to STAs that use TDD SP and appies this TDD Slot Structure and can be used to inform other STAs of the TDD slot structure without being part of the TDD SP network ( for example in case of coexistance). It is not clear whether this field will have the peer STA that applies the TDD SP or any receiver of the TDD slot structure. I dont see a vlaue to add the peer STA address in the Slot Structure element. TDD Solt Structure element should not change among peer STAs. | Remove Peer STA Address subfield or redefine it to indicate that this is the peer STA address that applies the TDD solt structure element. When this is transmitted with the beacon for coexistance maybe use broadcast address! | **Revised**  See the resolution below | TDD scheduling |

CID 4300

**Revised**

Discussion

The elements may be different for different STA, due to the address cannot be changed with no relation how the element is transmitted. In case the element is equal for all Associated STAs the broadcast address can be used.

***TGay editor replace at by***:

The Peer STA Address field is any valid individual or broadcast MAC address that specifies

the MAC address of the STA that is the intended recipient of the TDD Slot Structure element. The broadcast MAC address indicates that the TDD Slot Structure element is common for the entire BSS.

**References:**

1. IEEE P802.11ay/D3.0, February 2019