IEEE P802.11
Wireless LANs

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| Resolution to CIDs related to TDD Scheduling-Part 1 |
| Date: 2018-02-28 |
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Abstract

This submission proposes resolutions to several CIDs related to TDD scheduling. These 55 CIDs include:

1198, 1865, 1283, 1284, 1287, 1431, 1593, 1595, 1368, 1554, 2157, 1439, 1555, 1556, 1557, 1594, 2150, 2153, 1596, 1785, 1788, 1966, 1702, 1704, 2010, 1755, 2151, 1757, 1758, 1760, 1761, 1769, 1776, 1777, 1778, 1937, 1938, 1998, 2003, 2004, 2144, 2145, 2146, 2149, 2147, 2152, 2154, 2156, 2158, 2159, 2160, 2289.

The discussion is in reference to Draft IEEE P802.11ay/D1.0.

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| CID | Clause | Comment | Proposed change |
| 1198 | 9.4.2.128.2 | "Allocate one reserved bit in Figure 9-504 for a field named "TDD Channel Access Supported""This is not a valid editing instruction. | Replace by a valid editing instruction (insert, delete, change, replace). |
| 1865 | 9.4.2.128.2 | Changes for Figure 9-504 to allocated one Reserved bit B62 not shown in draft. | Add Figure 9-504 with new bit assignments. Assign one bit B62 to "TDD Channel Access Supported" and change Reserve to one bit assigned to B63 and change the number of bits from 2 to 1. Update Figure 9-504 for the next release of the draft. |

**Proposed resolution:** Accepted.

*Change the indicated subclause as follows:*

*Change the third row of Figure 9-504 as follows:*

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | B53 | B54 | B55 | B56 | B57 B59 | B60 | B61 | B62 | B63 |
|  | A-PPDU Supported | Heartbeat | Supports Other\_AID | Antenna Pattern Reciprocity | Heartbeat Elapsed Indciation | Grant Ack Supported | RXSSTxRate Supported | TDD Channel Access Supported | Reserved |
| Bit | 1 | 1 | 1 | 1 | 3 | 1 | 1 | 1 | 1 |

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| CID | Clause | Comment | Proposed change |
| 1283 | 10.36.6.2.2 | "The structure of TDD SP is shown in Figure 89. A TDD SP consists of one or more consecutive identical TDD intervals"The TDD slots in different TDD interval may have different Access type configuration, the description of "consecutive identical TDD intervals" is not very accurate.Make it more clear. | Change "The structure of TDD SP is shown in Figure 89. A TDD SP consists of one or more consecutive identical TDD intervals" to "A TDD SP consists of one or more TDD intervals with the same timing structure" |

**Proposed resolution:** Accepted

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| CID | Clause | Comment | Proposed change |
| 1284 | 10.36.6.2.2 | "P" is used for indicate the number of TDD Intervals in figure89, while "Q" is used for the value of the Number of TDD Intervals in TDD Slot Schedule element.Change "TDD Interval P" to "TDD Interval Q" | As in comment |

**Proposed resolution:** Accepted

TGay editor to change the “TDD interval P” in Figure 89 to “TDD interval Q”.

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| CID | Clause | Comment | Proposed change |
| 1287 | 9.4.2.268 | "The TDD Slot Schedule element defines the access assignment of DMG STAs to TDD slots"How does a DMG STA understand the TDD Slot´Change "DMG STAs" to "EDMG STAs" | As in comment. |
| 1431 | 10.36.6.2.2 | SP with TDD channel access is an EDMG feature only. Why can a DMG AP or DMG PCP set the AllocationType subfield and TDD Applicable SP subfield to indicate a TDD SP allocation? Suggest to replace "DMG" AP/PCP with "EDMG" AP/PCP in the places where it can be applied. | as in comment |
| 1593 | 9.4.2.268 | The TDD Slot Schedule element defines the access assignment of DMG STAs. However, the TDD slot schedule contains subfields like BW and Channel Aggregation. This is a contradiction since a DMG STA does not have parameters like BW or channel aggregation as in Table 36 (which is EDMG header-A) | Please define how those two parameter are set in case of DMG STAs. |
| 1595 | 10.36.6.2.2 | This subclause and others defining TDD SP refer to DMG and not EDMG, e.g. "The DMG AP or DMG PCP shall transmit the TDD Slot Schedule element to each DMG STA" | We should become clear which features are DMG and which are EDMG. Changes to DMG should be done in REVmd and not in TGay |

**Discussion:**

1. In section 9.4.2.128.2, we added a capabilitiy field “TDD Channel Access Supported” to DMG STA Capability Information field. If this field is set to 1, a DMG STA is able to access the TDD SP using the channel access procedures specified in 10.36.6.2.2.
2. An EDMG STA is also a DMG STA, and TGay is basically adding enhacement features on top of DMG STAs. Moreover, as stated in bullet 1, the TDD channel access feature will only apply to those DMG STAs with the “TDD Channel Access Supported” capability field set to 1.
3. Not restricting TDD channel access only to DMG STAs enable them to be upgradable to use the TDD features. Again as emphasized, only those DMG STAs with the “TDD Channnel Access Suported” field set to 1 can use the TDD channel access.
4. For DMG STAs that do not support channel bonding or channel aggregation introduced in 11ay, if they want to use TDD channel access, we can simply set the BW field to the 2.16 GHz channel, and set the Channel Aggregation field to 0.

**Proposed resolution:** Rejected

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| CID | Clause | Comment | Proposed change |
| 1368 | 10.36.6.2.2 | The Terminology of Simplex RX and Simplex TX is confusing. Rx for the AP is TX for the non-AP STA and vice versa. | Replace with Simplex TX with Simplex Downlink and Simplex RX with Simplex Uplink |
| 1554 | 9.4.2.268 | To clarify the description. Following the definition of simplex TX, simplex Rx in 10.36.6.2.2, the subject here shall be "non-AP and non-PCP STA" instead of "STA" | Replace "STA " with "non-AP and non-PCP STA" |
| 2157 | 10.36.6.2.2 | "Simplex TD TDD" and "Simplex RX TDD" names are confusing. We should change it to indicate "downstream" or "upstream". | please clarify |

**Discussion:**

These two CIDs have been resolved by the resolution proposed in “11-18-0139-01-00ay-tdd-slot-assignment-clarification-cid1940” which passed the motion in January 2018 IEEE.

**Proposed resolution:** Rejected.

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| CID | Clause | Comment | Proposed change |
| 1439 | 3 | TDD SP definition is not descriptive | Change the definition to describe aspects of the SP, or delete the definition |

**Proposed resolution:** Accepted

*Change the definition of TDD SP in Clause 3 as follows:*

**time division duplex (TDD) service period (SP)**: An SP that uses TDD channel access within the allocation~~has the TDD Applicable SP subfield in an Allocation field within an Extended Schedule element equal to 1~~.

NOTE---TDD channel access is defined in 10.36.6.2.2.

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| CID | Clause | Comment | Proposed change |
| 1555 | 10.36.6.2.2 | As shown in Figure 89, after a TDD interval, guard time GT3 is inserted and then cause two TDD intervals are not really "consecutive" in time domain. | Remove "consecutive" |

**Discussion:**

“Consecutive” here means there is nothing else except for the guard time between the two TDD intervals. It does not mean there is no time separation between the two TDD intervals.

**Proposed resolution:** Rejected

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| CID | Clause | Comment | Proposed change |
| 1556 | 10.36.6.2.2 | To align with the description in 9.4.2.268 Figure 76, it is better to use "access type" instead of "type" | Add "access" between "The" and "type" |

**Proposed resolution:** Accepted

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| CID | Clause | Comment | Proposed change |
| 1557 | 9.4.2.268 | In Figure 76, the length of "Bitmap and Access Type Schedule" is defined as ceiling(Q\*M/4); The ceiling function will pad extra bits when Q\*M is not a multiple of 4. How to pad the extra bits is not shown in the current draft document. | Define the padded extra bits as "00" or "11" |

**Discussion:**

Since value 11 (binary) is reserved, the padded extra bits should better be 00 (binary) as unassigned.

**Proposed resolution:** Accepted.

*Add the following sentence at the end of the last paragraph of 9.4.2.268*

Any extra padded bit pairs due to the ceiling function shall be 00 (binary).

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| CID | Clause | Comment | Proposed change |
| 1594 | 10.36.6.2.2 | "The TDD Slot Structure element may be included in DMG Beacon or Announce frames transmitted by the DMG AP or DMG PCP." Since the TDD slot structure element contains the slot schedule, it is very important information to OBSS STAs for interference mitigation. | Consider to change wording to shall: "The TDD Slot Structure element shall be included in DMG beacon or Announce frames..." |
| 2150 | 10.36.6.2.2 | We should indicate a mandatory mechanism in which to receive a TDD Slot Structure. We say we can have it in either Beacon or Announce. To reduce possible interop issues, specify one of them as mandatory. | As in comment |
| 2153 | 10.36.6.2 | Can a TDD Slot Structure be sent in an Association response frame? If not, change "The TDD Slot Structure element may be included in DMG Beacon or Announce frames transmitted by the DMG AP or DMG PCP." to "The TDD Slot Structure element shall only be included in DMG Beacon or Announce frames transmitted by the DMG AP or DMG PCP." | Please clarify |

**Discussion:**

D1.0 already states that “A DMG AP or DMG PCP shall transmit a TDD Slot Structure element to each DMG STA that is expected to transmit or receive during a TDD SP. ” However, whether the AP/PCP include it in Beacon or Annoucne should be implementation dependent.

**Proposed resolution:** Rejected.

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| CID | Clause | Comment | Proposed change |
| 1596 | 10.36.6.2.2 | "The reverse direction protocol (see 10.28) shall not be used in a TDD SP." It seems that more restrictions are needed. | Add e.g. "Neither AP nor STA shall initiate a frame exchange which does not meet both TDD schedule and response times" or similar |

**Discussion:**

The contribution “11-18-0069-02-00ay-mmwave-distributed-network-tdd-ack-text” that passed the motion in January 2018 IEEE specifies what frames cannot be transmitted in a TDD SP, which already resolves this CID.

**Proposed resolution:** Rejected

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| CID | Clause | Comment | Proposed change |
| 1785 | 10.38.6.2 | If TDD channel access is operated, sector level sweep defined in the current standard cannot be used as it requires immediate response. We have to define a protocol to accommodate SLS procedures without immediate response. | Please consider to integrate sector level sweep procedures or equivalent for TDD channel access. 11-17/1646 must be one approach, but it requires too long time to complete SLS. There should be an easier way to get it done more quickly leveraging existing SLS scheme. |
| 1788 | 10.36.6.4 | If TDD channel access is operated, beam refinement procedure defined in the current standard cannot be used as it requires immediate handshakes. We have to define a procedure to enable beam refinement without immediate response. | Please consider to integrate beam refinement protocol for TDD channel access. |
| 1966 | 10.38 | DMG/EDMG beamforming is not sufficient for TDD and no solution for TDD BF is provided | Bring submission to define TDD BF |

**Discussion:**

The contribution “11-18-0179-03-00ay-beamforming-for-mmwave-distributed-network” that passed the motion in Januarly 2018 IEEE defines the beamforing protocol and procedure for mmWave distribution networks, which therefore resolves these CIDs.

**Proposed resolution:** Rejected

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| CID | Clause | Comment | Proposed change |
| 1702 | 3.2 | An SP is not a field so how can it have a TDD Applicable SP subfield? | "Either the DMG STA scheduled to receive at the start of a TDD SP or the DMG STA identified by the destination AID in a Grant frame or Extended Schedule element that scheduled the SP or CBAP." |
| 1704 | 3.2 | An SP is not a field so how can it have a TDD Applicable SP subfield? | "Either the DMG STA scheduled to transmit at the start of a TDD SP or the DMG STA identified by the source AID in a Grant frame or Extended Schedule element that scheduled the SP or CBAP." |

**Proposed resolution:** Revised.

*Change the indicated definition in Clause 3.2 as follows:*

**destination directional multi-gigabit (DMG) station (STA)**: In a TDD SP~~service period (SP) with the TDD Applicable SP subfield equal to 1~~, it is a DMG STA that is expected to receive at the start of each time division duplex (TDD) SP. Otherwise, it is the A DMG STA identified by the destination association identifier (AID) field contained in a Grant frame or Extended Schedule element that caused the allocation of a service period (SP) or a contention based access period (CBAP).

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| CID | Clause | Comment | Proposed change |
| 2010 | 9.4.2.267 | The Slot Structure Start Time subfield and the Allocation Block Duration field are functionally overlapping with the Allocation Start field and Allocation Block Duration field in Extended Schedule element, respectively. | Delete the Slot Structure Start Time subfield and the Allocation Block Duration field when the TDD Slot Structure element is transmitted together with the Extended Schedule element. |

**Discussion:**

The Slot Structure Start Time field indicates the time for the structure of a TDD SP described in the element to take effect, while Allocation Start Time field indicates the start time of a specific allocation. These two fields are not the same.

**Proposed resolution:** Rejected

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| CID | Clause | Comment | Proposed change |
| 1755 | 9.4.2.267 | Slot Schedule field is misleading and confusing name. We should rename with something else, as the field gives duration, not schedule. | Rename Slot Schedule filed with Slot Duration Structure field (or something similar). |
| 2151 | 9.4.2.268 | "TDD Slot Schedule element" should be renamed to "TDD Slot Assignment element" to prevent confusion with Slot Schedule field described in Figure 75. | As in comment |

**Proposed resolution:** Revised

TGay editor to rename the “Slot Schedule” field within the TDD Slot Structure element to “Slot Structure” field and also modify associated text.

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| CID | Clause | Comment | Proposed change |
| 1757 | 9.4.2.268 | "Number of TDD Intervals in the Bitmap" field should read "Number Of TDD Intervals In The Bitmap" field. | Replace "Number of TDD Intervals in the Bitmap" with "Number Of TDD Intervals In The Bitmap" |

**Proposed resolution:** Accepted

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| CID | Clause | Comment | Proposed change |
| 1758 | 9.4.2.268 | The Bitmap And Access Type Schedule field can be very large, if we like to assign a schedule for a long duration in pseudo-static manner. The specification should have a mean to allocate pseudo-static scheduling for TDD as well. | As in comment. |

**Discussion:**

The TDD Slot Schedule element is transmitted to each STA basically through a unicast frame like Announce frame or Assocation Response frame. These unicast frames can be sent in direcational mode and therefore the overhead is not a big problem.

**Proposed resolution:** Rejected

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| CID | Clause | Comment | Proposed change |
| 1760 | 9.6.22.2 | TDD Slot Structure element may be contained in Announce frame. | Add TDD Slot Structure element to Table 9-416. |
| 1761 | 9.6.22.2 | TDD Slot Schedule element may be contained in Announce frame. | Add TDD Slot Schedule element to Table 9-416. |

**Proposed resolution:** Accepted

*Add the following two rows at the end of Table 9-416*

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| 23 | TDD Slot Structure | The TDD Slot Strucuture element is defined in 9.4.2.267. The TDD Slot Structure element is optionally present. If present, the TDD Slot Strucuture element specifies the structure of a TDD SP. |
| 24 | TDD Slot Schedule | The TDD Slot Schedule element is defined in 9.4.2.268. The TDD Slot Schedule element is optionally present. If present, the TDD Slot Schedule element specifies the access assignment within a TDD SP. |

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| CID | Clause | Comment | Proposed change |
| 1769 | 10.28.1 | The sentence reads "The RD protocol shall be supported by an EDMG STA." However, it is likely that EDMG STA that uses TDD Channel Access does not use this feature. | Replace "The RD protocol shall be supported by an EDMG STA." with "When dot11DMGTDDModeActivated (or something that controls TDD mode operation) is false, EDMG STA shall support RD protocol defined in 10.28." |

**Discussion:**

The last paragraph of 10.36.6.2.2 already prohibits the use of reverse directon protocol in a TDD SP.

**Proposed resolution:** Rejected

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| CID | Clause | Comment | Proposed change |
| 1776 | 10.36.6.2.2 | There is a guard time between each TDD slot, which is GT2. GT2 should not be presented if a single STA keeps on transmitting over multiple TDD slot, as it would cause unnecessary overhead. | Please allow transmission overriding GT2 when a single STA is transmitting a frame over multiple TDD slots. |

**Discussion:**

The TDD Slot Structure element already allows configuration of the different guard intervals.

**Proposed resolution:** Rejected

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| CID | Clause | Comment | Proposed change |
| 1777 | 10.36.6.2.2 | GT1 and GT3 are defined to be a guard time at the beginning and at the end of the TDD interval. It is not clear why we need GT before and after the TDD intervals. | We probably need only 1 guard time between TDD intervals. Please consider to remove GT1 or GT3. |

**Discussion:**

GT1 is the guard interval at the beginning of a TDD SP, when the AP or STA may need some time to be configured to operate in TDD mode. GT3 is the guard interval between two TDD intervals, when slot assignment changes are likely to occur. As a result, GT1 and GT3 will likely be different with GT2.

**Proposed resolution:** Rejected.

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| CID | Clause | Comment | Proposed change |
| 1778 | 10.36.6.2.2 | What STA receiver should do during the time in TDD-SP is not described at all. | Please describe what the receiver should do 1) at a TDD slot when the STA is scheduled, 2) at a TDD slot when the STA is not scheduled. |

**Discussion:**

1. The paragraph in P136L11-23 already clearly states the behaviour of a STA if it is scheduled in a TDD slot.
2. The paragraph in P136L 3-10 already states that “A DMG STA shall not transmit during a TDD SP unless it receives a TDD Slot Schedule element that indicates it is assigned to at least one TDD slot within the TDD SP by the DMG AP or DMG PCP”. Therefore, the behaviour ofa a STA if it is not scheduled in a TDD slot is also described.

**Proposed resolution:** Rejected

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| CID | Clause | Comment | Proposed change |
| 1937 | 10.36.6.2.1 | "A DMG STA shall transmit or receive in a TDD SP only if the TDD Channel Access Supported subfield in the STA's DMG Capabilities element is 1." Sentence is not clear while not mentioning that the TDD SP is allocated to the STA and what is the subfield of the partner. | A DMG STA shall not transmit or receive in a TDD SP only if the TDD Channel Access Supported subfield in the STA's DMG Capabilities element is not set to 1.A DMG STA shall not transmit in TDD SP if the TDD Channel Access Supported subfield in the destination STA's DMG Capabilities element is not set to 1. |

**Discussion:**

The original sentence is clear enough. If the destination STA does not support TDD channel access, it will not be scheduled in a TDD slot in the first place.

**Proposed resolution:** Rejected

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| CID | Clause | Comment | Proposed change |
| 1938 | 10.36.6.2.1 | "Except when transmitting a frame as part of the SP recovery procedure (10.36.6.7) or transmitting a response to the source DMG STA or transmitting a PPDU as part of an RD response burst (10.28) or in a TDD slot, the STA identified by the Destination AID..." The sentence is incorrect for TDD slot that can be unassigned, and the STA is not required to receive. | "Except when transmitting in a SP that is not a TDD SP a frame as part of the SP recovery procedure (10.36.6.7) or transmitting a response to the source DMG STA or transmitting a PPDU as part of an RD response burst (10.28) or in a TDD slot, the STA identified by the Destination AID."Editor append paragraph after paragraph that ends at P134L24DMG STA that sets to 1 TDD Channel Access Supported subfield in the STA's DMG Capabilities element shall follow TDD SP rules (10.36.6.2.2) in SP indicated by TDD Applicable SP subfield set to 1.  |

**Discussion:**

1. The current sentence already says the requirement is valid except when in a TDD slot.
2. Currrent 11ay sepc already states that if the SP is a TDD SP, the rules in 10.36.6.2.2 shall apply.

**Proposed resolution:** Rejected.

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| CID | Clause | Comment | Proposed change |
| 1998 | 9.3.4.2 | Some new elements, such as TDD Slot Structure element, have not been added to the DMG Beacon frame | Add all the new elements that can be carried in the DMG Beacon frame. |

**Proposed resolution:** Accepted.

*Add the following two rows before the Vendor Specific row of Table 9-41*

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| 40 | TDD Slot Structure | The TDD Slot Strucuture element is defined in 9.4.2.267. The TDD Slot Structure element is optionally present. If present, the TDD Slot Strucuture element specifies the structure of a TDD SP. |
| 41 | TDD Slot Schedule | The TDD Slot Schedule element is defined in 9.4.2.268. The TDD Slot Schedule element is optionally present. If present, the TDD Slot Schedule element specifies the access assignment within a TDD SP. |

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| CID | Clause | Comment | Proposed change |
| 2003 | 9.4.2.267 | In the context, TDD SP should be used. | Change SP to TDD SP |

**Proposed resolution:** Accepted

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| CID | Clause | Comment | Proposed change |
| 2004 | 9.4.2.268 | It is not clear "...indicates the number of TDD intervals in the bitmap". | Please clarify what is definition of bitmap for "in the bitmap". |

**Proposed resolution:** Accepted

*Change P86L24-25 as follows:*

The Number of TDD Intervals in the Bitmap subfield indicates the number of TDD intervals described in the Bitmap and Access Type Schedule~~bitmap~~ following the time indicated by the Slot Schedule Start Time subfield.

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| CID | Clause | Comment | Proposed change |
| 2144 | 9.4.2.267 | In 10.36.6.2.2, we state that "A TDD interval comprises one or more TDD slots". Therefore we should disallow the Value of 0 for "Number of TDD Slots per TDD Interval". Perhaps we want to redefine this to be "The Number of TDD Slots per TDD Interval subfield indicates the number of TDD slots in each TDD Interval minus 1". | As in comment |

**Proposed resolution:** Accepted.

*Change P85L24-25 as follows:*

The Number of TDD Slots per TDD Interval subfield indicates the number of TDD slots in each TDD Interval minus 1.

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| CID | Clause | Comment | Proposed change |
| 2145 | 9.4.2.267 | Is the Value of 0 for "GTX Duration" allowed? Perhaps we want to either state that this is the case explicitly or redefine this to be "The GT1 Duration, GT2 Duration and GT3 Duration subfields indicate the durations, in microseconds, of the GT1, GT2 and GT3 guard times, minus 1, shown in Figure 89." | As in comment |

**Discussion:**

Providing an option of configuring the GTX duration to be 0 is fine

**Proposed resolution:** Rejected.

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| CID | Clause | Comment | Proposed change |
| 2146 | 9.4.2.267 | Since a beacon interval can be no longer than 1.024 seconds (1000 TUs) according to Table 11-23 of 802.11-2016, allocating 4 octets to "Slot Structure Start Time" is a bit of overkill. Consider allocating 3 octets which cover ~16.8 seconds. | As in comment |
| 2149 | 9.4.2.268 | Since a beacon interval can be no longer than 1.024 seconds (1000 TUs) according to Table 11-23 of 802.11-2016, allocating 4 octets to "Slot Schedule Start Time" is a bit of overkill. Consider allocating 3 octets which cover ~16.8 seconds. | As in comment |

**Discussion:**

Using the lower 4 octets of the TSF timer for timestamp indication has been used throughout 802.11. In order to keep it consistent with the other timestamp indication, we should better use 4 octets here.

**Proposed resolution:** Rejected

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| CID | Clause | Comment | Proposed change |
| 2147 | 9.4.2.267 | To reduce overhead, consider reducing the bit allocation of GTX Duration to 3 bits, so that the minimum value is 4 us and the maximum value is 11 us. | As in comment |

**Discussion:**

We need a clear argument to prove that 11us is enough to cover possible guard interval durations. Otherwise, we should better keep the field as it is today.

**Proposed resolution:** Rejected.

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| CID | Clause | Comment | Proposed change |
| 2152 | 10.36.6.2 | TDD Slot Schedule element can be received in either Announce frame or Association response. To reduce possible interop issues, specify one of them as mandatory. | As in comment |

**Discussion:**

Whether the AP/PCP includes the TDD Slot Schedule element in Annoucne frame or Associaion Response frame should be implementation dependent. As long as the AP/PCP transmits the TDD Slot Scheduele element before the expected time to take effect, it will be fine.

**Proposed resolution:** Rejected.

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| CID | Clause | Comment | Proposed change |
| 2154 | 9.4.2.267 | Can TDD Slot Duration be 0 us long? If not, assign the value of 0 as "Reserved". | please clarify |

**Discussion:**

The TDD Slot Duraton cannot be 0us long. A 0us long TDD slot shouldn’t be scheduled in the first place.

**Proposed resolution:** Revised.

*Change P86L11-12 as follows:*

The TDD Slot i Duration subfield, 1 ≤ i ≤ M, indicates the duration, in microseconds, of the ith TDD slot in each TDD interval, minus 1.

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| CID | Clause | Comment | Proposed change |
| 2156 | 10.36.6.2.2 | Figure 89 should indicate in the title that this is an example of assigned Simplex TX TDD and Simplex RX TDD slots, where TX TDD slots precedes RX TDD slots. It could be the case that all the slots are assigned to be either Simplex TX TDD or Simplex RX TDD. Such explicit description would help readers understand the protocol. | As in comment |

**Discussion:**

The title of Figure 89 already says this is an example of a TDD SP.

**Proposed resolution:** Rejected.

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| CID | Clause | Comment | Proposed change |
| 2158 | 10.36.6.2.2 | What are the transmission requirements in terms of timing synchronization in a TDD slot? This should be explicitly stated. | please clarify |

**Discussion:**

When scheduling a TDD SP, the allocation start duration already states the beginning time of the TDD SP comprising a sequence of TDD slots. No further synchronization is needed.

**Proposed resolution:** Rejected.

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| CID | Clause | Comment | Proposed change |
| 2159 | 10.36.6.2.2 | Why is a DMG AP transmission optional in a TX TDD slot and mandatory for a DMG non-AP in a RX TDD slot? | Make mandatory for both |

**Discussion:**

The spec sentence says “At the start of a simplex TX TDD slot, the DMG AP or DMG PCP should initiate transmissions addressed to the non-AP and non-PCP STA assigned to the TDD slot… ”

Therefor, what is optional is not the DMG AP transmission in a TX TDD slot. What is optional, is that the DMG AP or DMG PCP initiates the transmission at the start of a TX TDD slot. Since the DMG AP or DMG PCP can inidiate the transmission in the middle of the slot, it is reasonable to use “should” here.

**Proposed resolution:** Rejected.

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| --- | --- | --- | --- |
| CID | Clause | Comment | Proposed change |
| 2160 | 9.3.4.2 | We should add a bit to the beacon indicating whether the TDD SP procedure described in Section 10.36.6.2.2 is being allocated in an indoor or outdoor venue. For example, see Table 9-61 of 802.11-2016. | As in comment |

**Discussion:**

This comment should be raised in usecase discussion and is not related to Beacon frame format.

**Proposed resolution:** Rejected.

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| --- | --- | --- | --- |
| CID | Clause | Comment | Proposed change |
| 2289 | 10.36.6.2.2 | (SP with TDD Applicable subfield set to 1) should be TDD Applicable SP subfield | change to TDD Applicable SP |

**Proposed resolution:** Accepted

**Straw Poll:**

* **Do you agree to accept comment resolutions as proposed in doc 11-18/0355r0?**