IEEE P802.11
Wireless LANs

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| Spec Text for CR for CID 2698 |
| Date: 2019-03-08 |
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Abstract

This submission proposes resolutions for the following CIDs: 2698. The baseline for this comment resolution document is 802.11ba Draft 2.0.

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| **CID** | **Commenter** | **Clause** | **Page** | **Line** | **Comment** | **Proposed Change** | **Resolution** |
| 2698 | Xiaofei Wang | 9.4.2.273 | 31 | 1 | I disagree with the resolution for CID 1097. A group delay indicated by an AP to a group STAs assigned to the same Group ID may greatly benefit the power saving for the group of STAs since the STAs may not need to wake up prematurely to wait for a delayed packets that are expected to arrive later. | Consider to add "group delay parameter" for a group ID assigned to a STA based on | Revised—Agree in principle with the comment. Added an optional Group Max Delay field to the WUR Parameters filed by the AP. Instruction to the editor: please make changes included in 11-19/0372r1. |

**Discussion:**

* WUR Mode element

**TGba Editor: *Change Section 9.4.2.292 as follows***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | B0 | B1     | B2 | B3                                 B7 |
|  | WUR Duty Cycle Start Time Present | WUR Group ID List Present | Max Group Delays Present | Reserved |
| Bits: | 1 | 1 | 1 | 5(#1092) |
|  | * WUR Parameters Control field format
 |

The WUR Group ID List Present subfield is set to 1 if the WUR Group ID List subfield is present in the following WUR Parameters field and set to 0 otherwise.

The Max Group Delays Present subfield is set to 1 if the Max Group Delays subfield is present in the following WUR Parameters field and set to 0 otherwise.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | B0     B11 | B12           B14 | B15 | B16                        B79 |  |  |
|  | WUR ID | WUR Channel Offset | Reserved | WUR Duty Cycle Start Time (#699) | WUR Group ID List | Max Group Delays |
| Bit: | 12 | 3 | 1 | 64 | Variable | Variable |
| * WUR Parameters field format from WUR AP
 |  |
| * Subfields of WUR Parameters field from WUR AP
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| **Subfield** | **Definition** | **Encoding** |
| WUR ID | A WUR identifier that uniquely identifies the WUR non-AP STA within the BSS of the AP  |  The size of the subfield is 12 bits. |
| WUR FDMA Channel Offset | Indicates the offset of the WUR channel on which WUR Wake-up frames are transmitted relative to the WUR primary channel (see 30.10 (WUR FDMA operation)). (#575, #697, #876, #1014, #993) | The size of the subfield is 3 bits. The encoding is described in Table 9-321e (WUR Channel Offset subfield encoding). |
| Reserved | Reserved field | The size of the subfield is 1 bit. |
| WUR Duty Cycle Start Time | TSF time of the start point of the WUR duty cycle | The size of the subfield is 8 octets in units of µs. |
| WUR Group ID List | Indicates one or more WUR group IDs assigned to the STA | The format is shown in Figure 9-772j (WUR Group ID List subfield format). This subfield is present if the WUR Group ID List Present subfield of the WUR Parameters Control field is set to 1. Otherwise this subfield is not present. (#700) |
| Max Group Delays | Indicates one or more Max Group Transition Delays associated with one or more WUR group IDs assigned to the STA | The format is shown in Figure 9-772x (Max Group Delays subfield format). This subfield is present if the Max Group Delays Present subfield of the WUR Parameters Control field is set to 1. Otherwise this subfield is not present. |

**TGba Editor:Insert the following at Page 48 Line 52*:***

The format of the Max Group Delays subfield is defined in Figure 9-772x (Max Group Delays subfield format).

|  |  |  |
| --- | --- | --- |
|  | Group Delay Bitmap | Max Group Delays List |
| Bits: | Variable | variable |
| Figure 9-772x - Max Group Delays subfield format |

If the WUR Group ID Bitmap in the WUR Group ID List subfield is set to a non-zero value, the Group Delay Bitmap has the same size as the WUR Group ID Bitmap in the WUR Group ID List subfield and indicates whether a maximum group transition delay is provided for a WUR group ID in the Max Group Delays List field. Bit position n in the Group Delay Bitmap corresponds to bit position n in the WUR Group ID Bitmap in the WUR Group ID List subfield, and hence to WUR group ID equal to (SGID + n) mod 4096. A bit in the Group Delay Bitmap shall not be set to 1 if the corresponding bit in the WUR Group ID Bitmap in the WUR Group ID List subfield is set to 0. A bit in the Group Delay Bitmap is set to 1 to indicate that the max group transition delay is provided for the corresponding WUR group ID in the Max Group Delays List field. The total number of bits set to 1 in the Group Delay Bitmap field indicates the number of Max Group Transition Delay fields contained in the Max Group Delay List subfield.

If the WUR Group ID Bitmap in the WUR Group ID List subfield is set to 0, a single Max Group Transition Delay field is included in the Max Group Delays List subfield for the WUR group ID SGID if the Max Group Delays Present subfield is set to 1 in the WUR Parameters Control field. Otherwise the Max Group Delays subfield is not included and the Max Group Delays Present subfield shall be set to 0.

The Max Group Delays List subfield contains one or more Max Group Transition Delay fields.

|  |  |
| --- | --- |
|  | Max Group Transition Delay |
| Bits: | 8 |
| Figure 9-772x - Max Group Transition Delay subfield format |

The Max Group Transition Delay field corresponds to a WUR group ID indicates the longest transition delay among all STAs within the group associated with the WUR group ID. The encoding of the Max Group Transition Delay field is the same as the encoding of the Transition Delay subfield (see 9.4.2.290 WUR Capabilities element).

**TGba Editor: Insert the following at Page 74 Line 62*:***

A WUR AP may provide in the Max Group Delays subfield in the WUR Parameter field contained in the WUR Mode element the maximum transition delays for one or more groups of STAs identified by one or more WUR group IDs.

**TGba Editor: Insert the following at Page 76 Line 21*:***

A WUR non-AP STA may be in the doze state until the maximum transition delay for a WUR group ID has expired if the WUR non-AP STA receives a WUR Wake-up frame from its associated WUR AP addressed to a WUR group ID to which the STA is assigned and if the maximum transition delay for the WUR group ID has been indicated by the AP in a WUR Mode element.