IEEE P802.11
Wireless LANs

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| Resolutions for QoS and TSpec comments on 11md/D0.1  |
| Date: 2017-07 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Graham SMITH | SR Technologies | Davie, FL, USA. | 916 799 9563 | gsmith@srtrl.com |

Abstract

This submission proposes resolutions for CIDs 220, 74, 218, 17

Green indicates material agreed to in the group,

yellow material to be discussed, red material rejected by the group and

cyan material not to be overlooked.

The “Final” view should be selected in Word.

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| CID | Commenter | Clause  | Page  | Line | Comment | Proposed |
| 220 | Mark Rison | 9.6.3.2.1 | 1249 | 1 | "the Upper Layer Protocol Identification (U-PID) element indicates the upper layer protocol " -- well, maybe it does, but the STA is not required to do anything with this; it can treat it as an opaque octet string (4 instances in 9.6.3.2/3). The referenced location is only an exemplar | After the para with the cited text add "NOTE---The STA is not required to determine the upper layer protocol." in all 4 cases |

Discussion

Cited text is:

*When present in the ADDTS Request frame, the U-PID element indicates the upper layer protocol associated with the TID/TSID specified within the TSPEC element contained in this frame.*

This is an optional field in the Basic and DMG ADDTS Request frame variants and the Basic and DMG ADDTS Response frame variants.

Present at 1249.1, 1251.14, 1251.14, and 1252.5

9.4.2.154 the U-PID element is 3 (no LLC header) to 12 octets long (LLC Header with 16-bit context field with SNAP).

What is it for?

*This parameter is optionally present and specifies the parameters of the LLC for the purpose of (de)multiplexing of frames associated with the TSID.*

I suspect that there is plenty in the Standard that a STA does nothing with. Any information may or may not be useful, and I suspect a lot is not useful. Hence, I do not see why we need to point out that armed with this U-PID information as STA needs to be told that it can ignore it.

RESOLUTION

REJECT

A STA may or may not do anything with this optional field and this may be the case with many informational fields. Hence adding a note to that effect is not judged to be necessary.

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| CID | Commenter | Clause  | Page  | Line | Comment | Proposed |
| 74 | Graham Smith | 94.2.78 | 1066 | 18 | “The STA Count field specifies the number of associated QoS STAs that have indicated QoS traffic capability of the corresponding AC.” What is the timescale that the phrase “have indicated QoS raffic capability” meant to convey? Is it since formation of the BSS, and actually used the AC or just registered as a QoS STA?That is not clear. I assume the idea is that we want to identify STAs that are capable of and are using VO and VI traffic? The AP needs to note that this particular STA sent VI or VO traffic in the past? OR are we more interested in what it has done lately, say in the last day, last hour, etc. These days most if not all STAs are QoS STAs so to make this a useful IE, I would suggest a time limit should be used. Or at least the STA should have actually used the AC. Having said that I do wonder how useful this IE is. | Replace cited text, with either “The STA Count field specifies the number of associated QoS STAs that have transmitted QoS traffic of the corresponding AC.” OR “The STA Count field specifies the number of associated QoS STAs that have transmitted QoS traffic of the corresponding AC within the last 24 hours.” |

Discussion

We have a plethora of QoS/Traffic IEes which are like urinating down one’s leg – feels warm and good in the beginning but soon loses its appeal. Traffic is dynamic and hence knowing the present does not necessarily predict the future. Knowing the past, however, may predict the future – 11aa for example did propose the Qload idea that worked on the principle of peak loads over a week. However, I digress.

9.4.2.78 **QoS Traffic Capability element**

*The QoS Traffic Capability element provides information about types of traffic generated by a non-AP QoS*

*STA and is used by a QoS AP to indicate the access categories of associated non-AP QoS STAs.*

 “AC STA Count List” is the sub field in question. So where does it get its information?

Bits 4–6 (QoS Traffic Capability Flags.). Each of Bits 4–6 serves as a flag for a non-AP STA to indicate application requirements about the user priorities of the traffic it generates.

So it appears that a STA can also send this element in the (re)assocation request .

The AP advertises it in the Beacon and Probe response.

The cited sentence refers to the AP reporting what is has learnt from STAs.

“The STA Count field specifies the number of associated QoS STAs that have indicated QoS traffic capability of the corresponding AC”

RESOLUTION

REJECT

The AP is simply reporting the associated non-AP STAs that have sent their AC requirments in the their re(association) requests.

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| CID | Commenter | Clause  | Page  | Line | Comment | Proposed |
| 218 | Mark Rison | 11.3.5.4 |  |  | It is not clear whether TSPECs are preserved across reassociation to the same AP. Consider what happens if e.g. the TS Info Ack Policy is Block Ack (since the BA agreements have been reset). If reassociation to the same AP preserves Tses, you’d be left with a TS with BA policy without a BA agreement. 11.4.9.1 says “All TSPECs that have been set up shall be deleted upon disassociation and reassociation.” (but note this contradicts 11.4.9.2’s (DMG-only) “A non-AP and non-PCP STA that associates, disassociates or reassociates (except for reassociation to the same AP) shall locally delete all existing allocations and all TSs that have been established using a PTP TSPEC.”)Note that what other specifications do and don’t do is not relevant to what the specification of IEEE Std 802.11 STAs are required to do. | At the end of the first numbered list in 11.3.5.4 add “Tses established by a TSPEC element whose TS Info Ack Policy subfield was equal to Block Ack”. At the end of the second numbered list in 11.3.5.4 add “Tses established by a TSPEC element whose TS Info Ack Policy subfield was not equal to Block Ack”. Also change “All TSPECs that have been set up shall be deleted upon disassociation and reassociation. Reassociationcauses” to “All TSPECs that have been set up shall be deleted upon disassociation and upon reassociation to a different AP. Reassociationto a different AP causes” |
| 17 | Graham Smith | 11.3.5.4 | 1774 | 7 | “All TSPECs that have been set up shall be deleted upon disassociation and re-association. (11md D0.1 11.4.9.1 P1794L1)” 11.3.5.4 Correct list of items deleted on re-association to include TSPECs P1774L7 | Add TSPECs as 11) |

Discussion

Leaving DMG aside for the moment, the re-association method is useful and used to change settings, and TSPECs are certainly in that category. Therefore deleting the TSpec is correct.

The ‘contradiction’ in 11.4.9.2 is for Peer to Peer (PTP) TSpecs.

At 1780.45 we read

*To communicate between STAs in a PBSS or between non-AP DMG STAs in an infrastructure BSS, a TSPEC (as defined in 9.4.2.30 (TSPEC element)) is used to create or modify a TS between those STAs. This TSPEC is referred to as a PTP TSPEC.*

**So PTP Tspec is only for DMG STAs.**

At 1795.49 we see the cited text:

*A non-AP and non-PCP STA that associates, disassociates or reassociates (except for reassociation to the same AP) shall locally delete all existing allocations and all TSs that have been established using a PTP TSPEC.*

So this is saying that the PTP TSPEC is maintained if reassociation to the same AP.

At 1794.1 we read “ ***All TSPECs*** *that have been set up shall be deleted upon disassociation and reassociation*.”

So the ‘contradiction’ is the part in parenthesis “*(except for reassociation to the same AP)”*

This is OK assuming that “all TSPECs” does not include PTP TSpecs.

I do not see the reasoning to add the Block Ack restrictions to deleting a TSPEC as a “*any block ack agreements*” (P1773.60) are in the list to be deleted.

The list of deleted states/agreements in 11.3.5.4 is for “reassociation to the same AP” (1773.55) so it needs to be decided if the TSPEC should be deleted in this case. 1794.1 says “yes”, for a basic TSPEC, but 1795.49 says “no” for a PTP TSPEC.

**As the agreement for a PTP TSPEC is between DMG STAs, and the agreement for a basic TSPEC is between AP and STA, then they can be difference. Hence, we can safely add TSPEC to the list for deletion, and PTP TSPEC to the list for “not affected”.**

There is no need to change the text at 1794.1 as this is in the clause 11.4.9.1 which is the basic TS and the next clause is for the PTP TSPEC.

**RESOLUTION to CIDs 281 and 17**

**REVISED**

Add at 1774.8 (the following states, agreements and allocations shall be deleted or reset to initial values)

“11) TSPECs”

Add at 1774.28 (The following states, agreements and allocations are not affected by the reassociation procedure)

“13) PTP TSPECs”