IEEE P802.11  
Wireless LANs

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| LB266 CR for 35.3.7.1.3  (Negotiation of TID-to-link mapping) | | | | |
| Date: 2022-10-31 | | | | |
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Abstract

This submission proposes resolutions for multiple comments related to TGbe D2.0 with the following CIDs (32 CIDs):

* 11940, 12914, 13787, 13904, 12910, 10107, 10238, 12913, 12915, 10636, 13285, 10108, 12916, 10849, ~~12170~~, 10239. 12917, 11942, 11943, 12918, 10240, 11609, 12919, 13286, 12920, 12921, 12922, 13875, 12923, ~~12171~~, 12924, 12925

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: CID 12170 and 12171 were deferred.

Interpretation of a Motion to Adopt

A motion to approve this submission means that the editing instructions and any changed or added material are actioned in the subsequent TGbe Draft. This introduction is not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGbe Draft (i.e. they are instructions to the 802.11 editor on how to merge the text with the baseline documents).***

***TGbe Editor: Editing instructions preceded by “TGbe Editor” are instructions to the TGbe editor to modify existing material in the TGbe draft. As a result of adopting the changes, the TGbe editor will execute the instructions rather than copy them to the TGbe Draft.***

| **CID** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| --- | --- | --- | --- | --- |
| 11940 | 428.25 | TID-to-link mapping is currently not suitable for AP MLD Load control. The TID-to-link mapping needs to reduce the alternatives of the TID mapping. Currently there are no limitations for the TID to link configurations. | Please allow AP load control that may turn one STA link off or only allow STA to send High TID traffic on the link. The STA should have means to know the reason for the load balancing. The STA should be able to reject and provide reasons why the proposed TID2Link mapping is not suitable. | Rejected-  The group could not reach consensus the changes (11-22/1509r4) necessary to address the comment.  SP: Do you agree to resolve the following CIDs listed in 11-22/1509r4 and incorporate the text changes into the latest TGbe draft?  14055, 10488, 11106, 11108, 11763, 12632  Result: 52Y, 34N, 28A |
| 11942 | 429.10 | The AP and STA should use reason codes for all TID-to-link mapping operations. The reason codes help to explain why AP and STA desire to have the TID-to-link mapping. | Please add Reason Codes to TID-to-link mapping request and response frames and add descriprions for their use in TID-to-link mapping. | Rejected-  The group could not reach consensus the changes (11-22/1509r4) necessary to address the comment.  SP: Do you agree to resolve the following CIDs listed in 11-22/1509r4 and incorporate the text changes into the latest TGbe draft?  14055, 10488, 11106, 11108, 11763, 12632  Result: 52Y, 34N, 28A |
| 11943 | 429.10 | Load information helps: - STAs to understand AP TID 2link mapping requests - APs to justify their TID2link mapping proposals. The 802.11be should include link specific load information to TID2link mapping signaling, if AP requests STA to reduce the number of links or cancels some TID transmission in a link. | Please add link specific load information to set of links or all links to TIDtoLink Mapping request and response frames transmitted by AP that request STA to reduce the number of links or cancels some TID transmission in a link. | Rejected-  The group could not reach consensus the changes (11-22/1509r4) necessary to address the comment.  SP: Do you agree to resolve the following CIDs listed in 11-22/1509r4 and incorporate the text changes into the latest TGbe draft?  14055, 10488, 11106, 11108, 11763, 12632  Result: 52Y, 34N, 28A |
| 12914 | 428.25 | Change the title to "TID-to-link mapping procedure" to better reflect the contents (also in line with similar "procedure" sections in baseline) | As in comment | Rejected-  The TID-to-link mapping procedure title is too broad.  Since 35.3.7.1.7 (Advertised TID-to-link mapping in Beacon and Probe Response frames) and 35.3.7.1.8 (Association procedures for TID-to-link mapping) are added, current title is more appropriate to differentiate each other. |
| 13787 | 428.25 | lack of normative text of how to treat a TID-to-Link mapping as successful on the initiator side. | Add text similar as "an initiating MLD shall regard a TID-to-link mapping as successful if it receives a TID-to-link Mapping response frame with the value of the Status Code field equal to 0" | Revised-  Agree in principle with the comment.  TGbe editor to make the changes shown in 11-22/1833r1 under all headings that include CID 13787. |
| **TGbe Editor: Change subclause 35.3.7.1.3 as the following:**  A multi-radio non-AP MLD should accept a TID-to-link mapping initiated by its associated AP MLD.  A TID-to-link mapping negotiation is successful if a MLD successfully transmits or receives a TID-to-link Mapping response frame with the value of the Status Code field equal to 0 (SUCCESS), (#13787) | | | | |
| 13904 | 428.25 | TID-to-link Mapping can't bring any value but bring complexity to single radio MLD, please disallow it. | please disallow TID to link mapping for single radio MLD | Rejected-  Single radio MLD can differentiate QoS depending on the TID-to-link mapping. |
| 12910 | 428.27 | The TID-to-link mapping capability (any level) is static and belongs to extended capabilities not ML element; Effort should go to using ML element for indications that can change throughout the connection lifetime. | Move TID-to-link mapping capability to Extended Capabilities element (9.4.2.26), consuming 2 contiguous bits. See "Service Interval Granularity" (bits 41-43) in Extended Capabilities for an example of using contiguous bits. | Rejected-  dot11TIDtoLinkMappingActivated is a control variable.  It can be dynamically changed.  Also, the static capability can be signaled through the ML element. |
| 10107 | 428.34 | if a MLD set a TID mapped to a different link set, what will happen when it's peer set the TID-to-link Mapping Negotiation Supported subfield equal to 1. use the later TID-to-link policy? | need some clarify on this. | Rejected-  The comment fails to identify a specific issue to be addressed. It fails to identify changes in sufficient detail so that the specific wording of the changes that will satisfy the commenter can be determined. |
| 10238 | 428.43 | Phrasing "a support of TID\_to-link mapping" is hard to follow | Change to "...an AP MLD has indicated that it supports TID-to-link mapping negotiation." | Rejected-  Please refer the following in the Table 9-401i.  “Indicates support for TID-to-link mapping negotiation.”  This is a definition of the TID-To-Link Mapping Negotiation Support field. |
| 10239 | 429.04 | Phrasing "a support of TID\_to-link mapping" is hard to follow | Change to "...an AP MLD has indicated that it supports TID-to-link mapping negotiation." | Rejected-  Please refer the following in the Table 9-401i.  “Indicates support for TID-to-link mapping negotiation.”  This is a definition of the TID-To-Link Mapping Negotiation Support field. |
| 12913 | 428.43 | Client can initiate TID-to-link mapping negotiation if and only if AP MLD supports the capabilty. | Change "if" to "if and only if" | Revised-  Agree in principle with the comment.  Otherwise, statement is added.  TGbe editor to make the changes shown in 11-22/1833r1 under all headings that include CID 12913. |
| **TGbe Editor: Change subclause 35.3.7.1.3 as the following:**  During a multi-link (re)setup procedure, a non-AP MLD may initiate a TID-to-link mapping negotiation by including the TID-to-link Mapping element in the (Re)Association Request frame if an AP MLD has indicated a support of TID-to-link mapping negotiation. Otherwise, the non-AP MLD shall not include the TID-to-link Mapping element in the (Re)Association Request frame. (#12913) | | | | |
| 12915 | 428.53 | Change "on which" to "to which" | As in comment | Accepted |
| 13285 | 428.58 | It is better to indicate an explicit success or failure for the TID-to-link mapping negotiation happening through the (Re)Association Request and Response frame exchanges. Current text does not cover the case when T2L mapping can be denied without suggesting a preferred T2L mapping in the (Re)Association Response frame. Consider extending the T2L mapping frame so as to provide indication of outcome for T2L mapping negotiation in the element itself. | Consider extending the T2L mapping frame so as to provide indication of outcome for T2L mapping negotiation in the element itself. | Rejected-  If the AP MLD does not have any preferred TID-to-link mapping, it can indicate a default mapping.  Also, if the AP MLD does not prefer a default mapping, it should provide the preferred mapping. In such case, it is not reasonable scenario that the AP MLD does not provide the preferred mapping. |
| 10636 | 428.57 | Add a NOTE clarifying that if the AP MLD rejects the proposed mapping received during association but accepts the association and proposes a preferred mapping ("Otherwise" bullet), the two MLDs operate in default mapping right after ML setup. Furthermore, a non-AP MLD is not required to initiate a new T2LM after association by transmitting a T2LM Request frame. After association, the non-AP MLD could continue to operate in default mapping or disassociate with the AP MLD or initiate a new T2LM different from what was requested or proposed (AP's preferred indication) during association exchange. | As in comment | Revised-  Please refer the following in 11-22/1023r5:  “Otherwise, if the AP MLD does not accept an individually requested TID-to-link mapping in an Association Request frame, the AP MLD shall indicate rejection of the proposed TID-to-link mapping by including in the (Re)Association Response frame the TID-to-link Mapping element that suggests a preferred TID-to-link mapping, and the default TID-to-link mapping remains established until a new TID-to-link mapping is advertised or negotiated.”  It clarifies that the default mapping is used after the association.  TGbe editor to make no change for this CID because the related change is already approved in 11-22/1023r5 (CID 14054). |
| 10849 | 428.63 | What is the case that a multi-link (re)setup can be successful even if the TID-to-link mapping negotiation is not successful and what's the procedure after the TID-to-link mapping negotiation fails, e.g. back to the default mapping mode? It will be great to clarify this clearly in the text of this Note. | As in comment | Revised-  Please refer the following in 11-22/1023r5:  “Otherwise, if the AP MLD does not accept an individually requested TID-to-link mapping in an Association Request frame, the AP MLD shall indicate rejection of the proposed TID-to-link mapping by including in the (Re)Association Response frame the TID-to-link Mapping element that suggests a preferred TID-to-link mapping, and the default TID-to-link mapping remains established until a new TID-to-link mapping is advertised or negotiated.”  It clarifies that the default mapping is used after the association.  TGbe editor to make no change for this CID because the related change is already approved in 11-22/1023r5 (CID 14054). |
| 10108 | 428.62 | self-contradictoray description in the NOTE 1, a multi-link setup successfully means the TID-to-link mapping is successful, otherwise, the peer need to re-nogitiate the stragetary in post assocation. To make it simple, the peer will use the TID-to-link mapping provided in the (Re)assocation response frame if it doesn't map to (re)assocation request frame. | rewording the Note1, as the comments | Revised-  Agree in principle with the comment.  Note 1 is clarified based on the comment.  TGbe editor to make the changes shown in 11-22/1833r1 under all headings that include CID 10108. |
| 12916 | 428.62 | First sentence is wrong and redundant - it means TID-to-link maping can also succeed but set up can fail. Th eonly combination of interest (in the contect of tsi NOTE) is adequately described by second sentence. | Change the body of NOTE 1 to "The Multi-link (re)setup procedure can be successful even if the TID-to-link mapping negotiation embedded in the setup procedure is not successful." | Revised-  Agree in principle with the comment.  Note 1 is clarified based on the comment.  TGbe editor to make the changes shown in 11-22/1833r1 under all headings that include CID 12916. |
| **TGbe Editor: Change subclause 35.3.7.1.8 (Association procedures for TID-to-link mapping) as the following:**  NOTE—~~Whether the multi-link (re)setup is successful or not is independent from whether the TID-to-link mapping negotiation that is done jointly with the multi-link setup is successful or not.~~ A multi-link (re)setup can be successful even if the TID-to-link mapping negotiation embedded in the multi-link (re)setup procedure is not successful. | | | | |
| 12917 | 429.07 | Change "After receiving the ..." to "Upon receiving an ..." | As in comment | Accepted |
| 12918 | 429.22 | Add a period ('.') to the end of paragraph. | As in comment | Accepted |
| 12920 | 429.41 | "teardown" --> "tear down" | As in comment | Accepted |
| 12921 | 429.45 | "If" --> "Once" | As in comment | Accepted |
| 12919 | 429.31 | (1) The word 'request' is missing from the end of the first sentence; (2) "affiliated" is not a good choice of wording given its meaing in the context of MLDs; (3) sentences can be combined and shortened. | Change the paragraph to "When initiating a new TID-to-link mapping request to a peer MLD, an MLD should take into account the peer MLD's preferred mapping if it has indicated one. In addition, an AP MLD shoud take into account a non-AP MLD's capabilities, constraints (e.g., single radio operation) and traffic flows when initiating a new TID-link-mapping request with that non-AP MLD.  Also delete the redundant NOTE 2. | Revised-  Agree in principle with the comment.  TGbe editor to make the changes shown in 11-22/1833r1 under all headings that include CID 12919. |
| 13286 | 429.34 | What does "the traffic flow(s) affiliated with the non-AP MLD" mean? Suggest changing to "the traffic flow(s) carried by the non-AP MLD" | As in comment | Revised-  Agree in principle with the comment.  TGbe editor to make the changes shown in 11-22/1833r1 under all headings that include CID 13286. |
| **TGbe Editor: Change subclause 35.3.7.1.3 as the following:**  (#12919) ~~If indicated by a peer MLD~~ When initiating a new TID-to-link mapping negotiation with a peer MLD, an MLD should take into account the preferred TID-to-link mapping of the peer MLD if it has indicated one ~~when it initiates a new TID-to-link mapping~~. In addition, an AP MLD should take into account the traffic flow(s) ~~affiliated with~~ from (#13286) the non-AP MLD and the capabilities and constraints (e.g., single radio operation) ~~(~~,if any~~)~~, of the non-AP MLD when providing a preferred TID-to-link mapping or initiating a new TID-to-link mapping negotiation with the non-AP MLD.  ~~NOTE 1—A non-AP MLD can indicate its constraints (such as single radio) during multi-link setup.~~ | | | | |
| 10240 | 429.24 | The purpose of the unsolicited TID-to-link mapping response is not clear. Why can't an MLD just use the TID-to-link mapping request in this case? If an MLD does receive an unsolicited TID-to-link mapping response, what should it do? The phrase "should take into account the preferred TID-to-link mapping" does not say much. | Remove option to send an unsolicited TID-to-link mapping response.  If there is desire to keep it, please explain when it should be used and what an MLD should do when it has received it. | Rejected-  Unsolicited TID-To-Link Mapping Response frame is to indicate a preferred TID-to-link mapping.  If the TID-To-Link Mapping Request frame is used like the comment, the recipient STA must immediately decide whether to accept or not.  To give more flexibility to schedule the TID-To-Link Mapping change at the peer STA side, current procedure is more appropriate. |
| 11609 | 429.24 | There seems two different ways to initiate TID-to-link Mapping: 1) send an individually addressed TID-to-link Mapping Request frame; 2) sending an unsolicited TID-to-link Mapping Response frame that includes the TID-to-link Mapping element and sets the Status Code to 134. Why do we need two different ways to initiate TID-to-link mapping? Does the 2nd method need a response from the receving MLD? | either delete the paragraph in line 24 page 429 or clarify why the unsolicited TID-to-link Mapping Response frame is needed and if a response to such an unsolicated TID-to-link Mapping Response frame is required. | Rejected-  Unsolicited TID-To-Link Mapping Response frame is to indicate a preferred TID-to-link mapping.  If the TID-To-Link Mapping Request frame is used like the comment, the recipient STA must immediately decide whether to accept or not.  To give more flexibility to schedule the TID-To-Link Mapping change at the peer STA side, current procedure is more appropriate.  And the spec does not have any statement that a response to an unsolicated TID-To-Link Mapping Response frame is required. |
| 12922 | 429.48 | Change the beginning of the sentence to "In case mapping of a TID is missing in the negotiation, .." | As in comment | Rejected-  Regarding the proposed change, “In case mapping of a TID”,  it is not clear what is mapped to a TID. |
| 13875 | 429.48 | For advertised TID-to-link mapping, if the TID-to-link mapping of a specific TID is missing, then this specific TID is mapped to all setup links. Please update the text. | please update the the text | Rejected-  If the TID-to-link mapping of a specific TID is missing, then mapping of this specific TID is not changed. So, the proposed change from the commenter is not correct. |
| 12923 | 429.49 | When something "remains valid" it means it is unchanged. Change two instances of "remains unchanged and valid" to "remains valid". | As in comment | Rejected-  "remains valid" does not imply that it is unchanged.  Because the changed mapping can be considered as the valid mapping. |
| 12170 | 428.65 | No consideration for adding link(s) in Negotiation of TID-to-link mapping procedure. | Add a paragraph about the TID-to-link mapping negotiation when adding link(s). | Rejected-  No additional consideration is needed.  If a MLD want to establish the TID mapping to a new link, a MLD can send a TID-To-Link Mapping Request frame anytime. |
| 12171 | 429.53 | No consideration in Negotiation of TID-to-link mapping procedure for removing link(s). For example, in case of that the link set consists of three links(link1/link2/link3) and TID0 through TID3 are maped to only link1, it is not clear how TID0 through TID3 are mapped to those remaining links. | Add a paragraph about TID-to-link mapping negotiation when removing link(s). | Rejected-  Current solution in the spec is that a MLD tear down the negotiated TID-to-link mapping.  In the several reasons, e.g., channel switch, link removal, a MLD can send a TID-To-Link Mapping Teardown frame.  But it is not necessary to mention all scenario in the spec. |
| 12924 | 429.56 | In the paragraph, change "bit position i" to "bit i" (see baseline conventions). Also change "the link ID i" with "link ID i". | As in comment | Rejected-  Please see the baseline convention.  For example,  “If bit position n of the Block Ack Bitmap subfield is 1…”  “If bit position n of the Block Ack Bitmap subfield is 0…”  If you disagree, please submit a comment to REVme. |
| 12925 | 429.62 | In the paragraph, change "bit position i" to "bit i" (see baseline conventions). Also change "the link ID i" with "link ID i". | As in comment | Rejected-  Please see the baseline convention.  For example,  “If bit position n of the Block Ack Bitmap subfield is 1…”  “If bit position n of the Block Ack Bitmap subfield is 0…”  If you disagree, please submit a comment to REVme. |