IEEE P802.11  
Wireless LANs

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| LB 266 Resolution for CIDs in Quarantine – Part 2 | | | | |
| Date: December 02, 2022 | | | | |
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| Alfred Asterjadhi |  |  |  |  |

Abstract

This submission proposes resolutions for following 92 CIDs received for TGbe LB266:

* **10008**, **10039,10863,11594**, **12726,12728,12892, 13587,**
* **13588,13589**, **13813,10028**
* **11642**, **13071**, **13920**,
* **10674**, **10710**, **12711**, **13221**, **12940**,
* ,
* **11106**, **11108**, **11763**, **14055**, **10058**, **10060**,
* **10061**, **10367**, **10660**, **11158**, **11657**, **13081**, **13083**, **13084**, **13635**,
* **10627**, **11179**, **11598**, **12617**, **13876**, **11863**,
* **12245, 11249, 12768**.

**Color Code Legend:**

* **These CIDs**: Have already been approved under the quarantine procedure in one of the revisions of 11-22/1849.
* **These CIDs**: Have already either been approved or are ready for motion with resolutions contained in other documents.
* These CIDs: Have already been allocated time for discussion/or were discussed in other documents but with no consensus. These are ready for motion under the quarantine procedure in a subsequent Joint conf call.
* : Were requested to have additional time for discussion/SP and are still pending discussion in those other documents.
* These CIDs: Are still missing a technical note from the respective POC. POCs please check these CIDs and provide a technical note based on the discussions so that we can move these CIDs to green.

**Revisions:**

* Rev 0: Initial version of the document. Contains all CIDs that were discussed during the Joint or MAC ad-hoc conf calls, from September 18th until October 31st, which have not reached consensus yet.
* Rev 1: Added received technical notes from POCs for a set of the CIDs. Removed 10473 as it was requested for separate discussion by Yonggang (doc pending), 10673, 12832, 13220, 13487, 13489 as it was requested for separate discussion by Duncan (doc 11-22/1457), 11700 requested by Abdel (doc 11-22/1373), 13587, 10039, 10863, 12726, 12728, 12892, 13588, 13813 requested by Vishnu (doc 11-22/1335r0), 11852, 13453 requested by Li-Hsiang (doc pending), 10059, 11656, 10042, 10046, 10047 requested by Morteza (doc pending), removed 10434 and 12813 as they were already resolved in Nov meeting, removed 13452 as requested by Ming (doc pending), 10386 as requested by Guogang (doc pending).
* Rev 2: Some additional updates based on e-mails that were missed during the first scan and some additional received technical notes. Removed CIDs 10386, 12158, 10572, 13735, 11121, 13734, 10206, 13960, 13620, 10426, 12484, 12643, 10876, 12380, 13856 due to the inconsistencies as to which doc is covering what (pending feedback from Minyoung/Guogang on what CID will be covered where). Note for Minyoung: The CIDs highlighted in red above are not in this document, so please check their status in the spreadsheet to ensure consistency. Removed CIDs that are listed in 1500, 1501, and 1503 as per request by liwen to separate (asked Liwen to send e-mails to reflector). Removed one copy of each 13876 and 12617 as they were duplicates.
* Rev 3: Accounts for updates (on the fly) before running the motion.
* Rev 4: Classified CIDs that passed motion with **this color**, and classified with **this color** those that are pending for motion in the next joint conf call. For some reason the resolution for CIDs 11106, 11108, 11763, 14055 had remained in the R3 document that was uploaded in the server prior to running the motion, however we were supposed to not run the motion on them since we were waiting for technical notes from Brian. Hence the plan is to re-run the motion on these CIDs, for which the updated resolution contains the technical notes provided by Brian. Similarly, re-running the motion on 11863, and 12245 as the version uploaded to the server prior to running the motion had issues and did not include the technical notes we prepared on the fly. This version does contain those two notes. And added 11249, 12768 which were part of doc 11-22/1454r2 but were missed in the previous version and have same resolution as the set of CIDs that were discussed in 11-22/1454r2.
* Rev 5: Added back CIDs 13587, 10039, 10863, 12726, 12728, 12892, 13588, 13813 for which Motion 486 failed.

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 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.***

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| **CID** | **Commenter** | **Clause** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 10008 | Jay Yang | 35.3.17 | 463.38 | 11be SPEC should have a resolution to address the initial frame overlapped with goup addressed frame reception. e.g. EMLSR non-AP MLD indicates the group addressed frame receving link to AP MLD, so that AP MLD know when and where to send the initial frame. | the commenter will provide a resolution on this. | Rejected—  This CID is discussed on September 28, 2022, but no straw poll is conducted yet.  Vishnu Ratnam 22/1335r3  Technical Notes <The group could not reach consensus on the need for a mechanism to indicate the link where an EMLSR non-AP MLD intends to receive group addressed frames.> |
| 10039 | Morteza Mehrnoush | 35.3.17 | 463.38 | It's not clear how the non-AP MLD can receive the beacons over the EMLSR links; also the groupcast frame delivery is not explained in the spec. Please add text to cover this. | as in comment | Rejected—  This CID is discussed on September 28, 2022, and a motion was run on 11-22/1355r8 in December 14 2022 which failed (Result: 31Y, 37N, 30A).  Vishnu Ratnam 22/1335r8 |
|  |  |  |  |  |  |  |
| 10863 | Yousi Lin | 35.3.17 | 461.56 | Behavior of non-AP MLD that is in EMLSR mode for the reception on Beacon and other group addressed frames should be specified. | as in comment | Rejected—  This CID is discussed on September 28, 2022, and a motion was run on 11-22/1355r8 in December 14 2022 which failed (Result: 31Y, 37N, 30A).  Vishnu Ratnam 22/1335r8 |
| 11594 | Vishnu Ratnam | 35.3.17 | 463.25 | A mechanism for an EMLSR nonAP MLD to reliably receive beacon frames and other group addressed frames, without significantly hindering data traffic reception is required. | Define a mechanism where an EMLSR nonAP MLD can negotiate a primary link for receiving group addressed frames via an indication in the EML operating mode notification frame. | Rejected—  This CID is discussed on September 28, 2022, but no straw poll is conducted yet.  Vishnu Ratnam 22/1335r3  Technical Notes <The group could not reach consensus on the need for a mechanism to indicate the link where an EMLSR non-AP MLD intends to receive group addressed frames> |
| 12726 | Pascal VIGER | 35.3.17 | 461.55 | EMLSR STAs shall be able to receive beacon frames on their EML links in order to determine the TWT/rTWT SPs of which they are member of | Please provide rules for an EMLSR STAs to be able to receive beacon frames on their EMLSR links. | Rejected—  This CID is discussed on September 28, 2022, and a motion was run on 11-22/1355r8 in December 14 2022 which failed (Result: 31Y, 37N, 30A).  Vishnu Ratnam 22/1335r8 |
| 12728 | Pascal VIGER | 35.3.17 | 461.55 | EMLSR STAs shall be able to receive beacon frames on their EMLSR links in order to determine the TWT/rTWT SPs of which they are member of. There is an issue if an IC frame is received during a TBTT expiry on another link. | Please provide rules for an EMLSR STAs or AP, to deal with the case of initial Control frame overlapping the TBTT on other EMLSR Link . | Rejected—  This CID is discussed on September 28, 2022, and a motion was run on 11-22/1355r8 in December 14 2022 which failed (Result: 31Y, 37N, 30A).  Vishnu Ratnam 22/1335r8 |
|  |  |  |  |  |  |  |
| 12892 | Ilya Levitsky | 35.3.17 | 464.63 | In Note 7, it is not clear how any STA affiliated with a non-AP MLD that is operating in the EMLSR mode can receive Beacon frames, while listening operation only "includes CCA and receiving the initial Control frame of frame exchanges that is initiated by the AP MLD". | Please clarify how a STA affiliated with a non-AP MLD that is operating in the EMLSR mode can receive Beacons, if during listening it performs just CCA and reception of certain Control frames. | Rejected—  This CID is discussed on September 28, 2022, and a motion was run on 11-22/1355r8 in December 14 2022 which failed (Result: 31Y, 37N, 30A).  Vishnu Ratnam 22/1335r8 |
| 13587 | Yongho Seok | 35.3.17 | 463.38 | "...except when the frame exchanges initiated by the initial Control frame on one of the EMLSR links overlaps with group addressed frame transmissions on the other EMLSR link where the non-AP STA intends to receive the group addressed frames." Please add the folloing: "In which case, the STA affiliated with the non-AP MLD does not respond to the initial Control frame and receives the group addressed frames." | As in the comment. | Rejected—  This CID is discussed on September 28, 2022, and a motion was run on 11-22/1355r8 in December 14 2022 which failed (Result: 31Y, 37N, 30A).  Vishnu Ratnam 22/1335r8 |
| 13588 | Yongho Seok | 35.3.17 | 463.40 | "...where the non-AP STA intends to receive the group addressed frames." Based on the current spec, the non-AP STA may singal which STA will receive the group addressed frame, through 26.8.6 (Negotiation of wake TBTT and wake interval). And, in 26.8.6, "The TBTT scheduled STA shall be in the awake state to listen to Beacon frames transmitted at negotiated wake TBTTs and shall operate as described in 26.8.3.3 (Rules for TWT scheduled STA)." So, during the negotiated wake TBTT, the AP shall not send the initial Control frame. Please clarify the this. | As in the comment. | Rejected—  This CID is discussed on September 28, 2022, and a motion was run on 11-22/1355r8 in December 14 2022 which failed (Result: 31Y, 37N, 30A).  Vishnu Ratnam 22/1335r8 |
| 13589 | Yongho Seok | 35.3.17 | 463.40 | "...where the non-AP STA intends to receive the group addressed frames." Please add the field in the EML Operating Mode Notification frame to indicate the STA that intends to receive the group addressed frames as the optional feature. | As in the comment. | Rejected—  This CID is discussed on September 28, 2022, but no straw poll is conducted yet.  Vishnu Ratnam 22/1335r3  Technical Notes < The group could not reach consensus on the need for a mechanism to indicate the link where an EMLSR non-AP MLD intends to receive group addressed frames.> |
| 13813 | Yuchen Guo | 35.3.17 | 463.39 | Is it possible that a initial control frame is overlapped in time with group addressed frames on other links? we should avoid that | please clarify | Rejected—  This CID is discussed on September 28, 2022, and a motion was run on 11-22/1355r8 in December 14 2022 which failed (Result: 31Y, 37N, 30A).  Vishnu Ratnam 22/1335r8 |
|  |  |  |  |  |  |  |
| 10028 | Morteza Mehrnoush | 9.4.2.315 | 251.06 | In this sentense it should be changed to "not all TIDs" because it's already negotiated a mapping and so it's not all TID to all link mapping. Please change it to: "negotiated a TID-to-link mapping with an AP MLD and not all the TIDs are mapped to all the enabled links" | as in comment | Rejected—  This CID is discussed on September 28, 2022, but no straw poll is conducted yet.  Minyoung Park 22/1381r3  Technical Notes < The proposed resolution was ‘REJECTED’ with the following rejection reason “The phrase “…or link recommendation for a non-AP MLD that has negotiated a TID-to-link mapping with an AP MLD and all TIDs are mapped to all the enabled links…” is to cover a case where TID-to-link mapping is done but mapping all TIDs to all enabled links. This is allowed in the current spec.” but the commenter disagreed with the resolution and couldn’t reach consensus.> |
| 11642 | Morteza Mehrnoush | 9.4.2.315 | 251.06 | In this sentence it should be changed to "not all TIDs" because it's already negotiated a mapping and so it's not all TID to all link mapping. Please change it to: "negotiated a TID-to-link mapping with an AP MLD and not all the TIDs are mapped to all the enabled links" | as in comment | Rejected—  This CID is discussed on September 28, 2022, but no straw poll is conducted yet.  Minyoung Park 22/1381r3  Technical Notes < The proposed resolution was ‘REJECTED’ with the following rejection reason “The phrase “…or link recommendation for a non-AP MLD that has negotiated a TID-to-link mapping with an AP MLD and all TIDs are mapped to all the enabled links…” is to cover a case where TID-to-link mapping is done but mapping all TIDs to all enabled links. This is allowed in the current spec.” but the commenter disagreed with the resolution and couldn’t reach consensus.> |
| 13071 | Chittabrata Ghosh | 9.4.2.315 | 251.06 | In this sentense it should be changed to "not all TIDs" because it's already negotiated a mapping and so it's not all TID to all link mapping. Please change it to: "negotiated a TID-to-link mapping with an AP MLD and not all the TIDs are mapped to all the enabled links" | as in comment | Rejected—  This CID is discussed on September 28, 2022, but no straw poll is conducted yet.  Minyoung Park 22/1381r3  Technical Notes < The proposed resolution was ‘REJECTED’ with the following rejection reason “The phrase “…or link recommendation for a non-AP MLD that has negotiated a TID-to-link mapping with an AP MLD and all TIDs are mapped to all the enabled links…” is to cover a case where TID-to-link mapping is done but mapping all TIDs to all enabled links. This is allowed in the current spec.” but the commenter disagreed with the resolution and couldn’t reach consensus.> |
| 13920 | Ming Gan | 35.3.12.4 | 443.12 | please add an exception, add ""except for TID to same links subset" after "with nondefault mapping" | add ""except for TID to same links subset" after "with nondefault mapping" | Rejected—  This CID is discussed on September 28, 2022 with 22/1381r3, but no straw poll is conducted yet.  This CID is discussed on November 15, 2022 with 22/1381r4, but no straw poll is conducted yet.  Minyoung Park 22/1381r3  Technical Notes < The proposed resolution in doc 22/1381r5 that moves MLTI element out from the Beacon frame and defining a new Beacon-A frame that can contain potentially long information elements was discussed in the group to resolve the beacon bloating problem, but the group couldn’t reach consensus.> |
| 10674 | Duncan Ho | 9.4.2.316 | 251.40 | Currently, the standard lacks a fast way to convey dynamic QoS info (e.g., delay deadline of the HOL packet). Add a more dynamic mechanism for QoS reporting | Add a more dynamic mechanism for QoS reporting. Contribution to follow | Rejected—  This CID is discussed on September 26, 2022 with 22/1454r1, but no straw poll is conducted yet.  This CID is discussed on November 14, 2022 with 22/1454r2. The straw poll results are 39 Yes, 24 No, 27 Abstain.  Duncan Ho 22/1454r1  Technical Notes <Main concern mentioned by members was that it is late to address in TGbe> |
| 10710 | Liangxiao Xin | 9.2.4.6.4 | 122.44 | Letancy sensitive traffic requires to be transmitted before it is expired. However,there is no legancy information in BSR for the latency sensitive traffic. AP may schedule trigger-based transmission wihtout considering the legacy requirement. AP may schedule the trigger transmission after the latency sensitive traffic expires. | add expiration time in BSR for latency sensitive traffic | Rejected—  This CID is discussed on September 26, 2022 with 22/1454r1, but no straw poll is conducted yet.  This CID is discussed on November 14, 2022 with 22/1454r2, but no straw poll is conducted yet.  Duncan Ho 22/1454r1  Technical Notes <Main concern mentioned by members was that it is late to address in TGbe> |
| 12711 | Pascal VIGER | 9.2.4.6.4 | 934.11 | QoS Characteristics element provides parameters that describe traffic characteristics (within the SCS procedure), especially the low latency (LL) parameters, so that AP shall be able to create an optimal schedule . Unfortunatly, it is well known that such traffic is never well specified and does not inform the real amount of LL at a given time inside buffer's STA. An updated BSR shall be provided for Latency Sensitive data | An updated BSR Control shall inform the AP scheduler of an amount of data with regards to a timing indication, which provides the expected date for delivery (e.g. UL trigger). This greatly helps the AP scheduling UL RUs accordingly (date and size). | Rejected—  This CID is discussed on September 26, 2022 with 22/1454r1, but no straw poll is conducted yet.  This CID is discussed on November 14, 2022 with 22/1454r2, but no straw poll is conducted yet.  Duncan Ho 22/1454r1  Technical Notes <Main concern mentioned by members was that it is late to address in TGbe> |
| 13221 | Evgeny Khorov | 9.4.2.316 | 66.54 | It is not clear, how a STA can indicate the current BSR with the delay budget of the head-of-line packet | Add the corresponding mechanism | Rejected—  This CID is discussed on September 26, 2022 with 22/1454r1, but no straw poll is conducted yet.  This CID is discussed on November 14, 2022 with 22/1454r2. The straw poll results are 39 Yes, 24 No, 27 Abstain.  Duncan Ho 22/1454r1  Technical Notes <Main concern mentioned by members was that it is late to address in TGbe> |
| 12940 | Kirill Chemrov |  | 0.00 | There is a terms conflict between Link (identifier) ID in context of MLD and Link ID in context of Mesh, link identifier in context of TDLS. | Change the term (for example, Link Index) or add a note not to confuse these terms. | Rejected—  This CID is discussed on September 26, 2022, but no straw poll is conducted yet.  Gaurang Naik 22/1477r1  Technical Notes <Several options were discussed to rename the Link ID subfield. However, the group did not agree to rename the subfield since it would entail several changes throughout the draft as Link ID subfield is integral to several aspects of Multi-Link operations.> |
| 11106 | Brian Hart | 35.3.7.1.3 | 429.15 | When a STA can just decline a neg for almost any reason, we know from experience that the neg will rarely succeed in the field, even if it helps the collective experience of all STAs in the area . | Given the AP is most responsible and most able to improve the collective experience of all STAs in an area, ensure the AP can enforce a T2LM neg. At the same time non-AP STAs (and APs) have constraints that need to be considered and addressed: they need to be able express their constraints and to propose alteratives, and for these constraints and alternative to be taken into account by the AP. Incorporate these considerations into the T2LM feature. | Rejected—  This CID is discussed on October 12, 2022 with 22/1509r4. The straw poll result is 52Y, 34N, 28A.  Pooya Monajemi 22/1509r4  Technical Notes < Although the group could not come to a consensus on the load balancing proposal via T2LM in 22/1509r4, at the same time an enforceable load balancing mechanism is provided by the BTM frame with a Neighbor List equal to the AP itself with a different set of links listed. This mechanism was described in the resolution to CID 10087 in document 11-22/1252r4> |
| 11108 | Brian Hart | 35.3.7.1.3 | 429.17 | PREFERRED\_TID\_TO\_LINK\_MAPPING\_SUGGESTED is a very opaque status code:. Preferred for what reason? Are the reasons different for different links? | Add richer and per-link status/reason codes. | Rejected—  This CID is discussed on October 12, 2022 with 22/1509r4. The straw poll result is 52Y, 34N, 28A.  Pooya Monajemi 22/1509r4  Technical Notes <The group could not reach consensus on a proposed change that would resolve the comment. Relative to the changes proposed in 22/1509r4, there was concern expressed that a) per-link status codes added complexity, b) different implementations might not consistently pick the same reason code in the same circumstances and c) the value of a specific reason code is lower whenever it is unclear what action the recipient should undertake given that status information> |
| 11763 | Gaurav Patwardhan | 9.6.35.3 | 267.49 | TID-to-link mapping is versatile tool which can be used in multiple use cases. The reason code for an MLD to reject a proposed mapping by its peer MLD should be descriptive enough in each of the myriad use cases that the peer MLD can understand why the mapping was rejected and can propose a better mapping. | Extend the status code field to more reason codes to address more use cases. | Rejected—  This CID is discussed on October 12, 2022 with 22/1509r4. The straw poll result is 52Y, 34N, 28A.  Pooya Monajemi 22/1509r4  Technical Notes < The group could not reach consensus on a proposed change that would resolve the comment. Relative to the changes proposed in 22/1509r4, there was concern expressed that a) per-link status codes added complexity, b) different implementations might not consistently pick the same reason code in the same circumstances and c) the value of a specific reason code is lower whenever it is unclear what action the recipient should undertake given that status information> |
| 14055 | Pooya Monajemi | 35.3.7.1 | 427.05 | There are situations in which performing load balancing between links by an AP becomes vital to the operation of an 802.11 network. The spec needs an enforceable and flexible mechanism to perform load balancing between links | Introduce a load balancing mechanism, preferably by extending TID to Link Mapping | Rejected—  This CID is discussed on October 12, 2022 with 22/1509r4. The straw poll result is 52Y, 34N, 28A.  Pooya Monajemi 22/1509r4  Technical Notes < Although the group could not come to a consensus on the load balancing proposal via T2LM in 22/1509r4, at the same time an enforceable load balancing mechanism is provided by the BTM frame with a Neighbor List equal to the AP itself with a different set of links listed. This mechanism was described in the resolution to CID 10087 in document 11-22/1252r4.> |
| 10058 | Morteza Mehrnoush | 35.3.21.2 | 471.12 | The current spec text for the TDLS operation only works when all the links of the non-AP MLD has STR link relation, however when the links of non-AP MLD have NSTR link relation (lets say L1 and L2 are NSTR link pair), the peer STA of non-AP MLD may initiate PPDU over L1 and AP of AP MLD may initiate PPDU over L2, and the end time of the PPDUs are not aligned, so the response frame by the non-AP MLD may corrupts either of the PPDUs. A mechanism to prevent such a self interference among NSTR link pair is needed. | as in comment | Rejected—  This CID is discussed on September 26, 2022 with 22/1586r2, but no straw poll is conducted yet.  This CID is discussed on November 17, 2022 with 22/1586r2. The straw poll results are 31 Yes, 45 No, 29 Abstain.  Abhishek Patil 22/1586r2  Technical Notes <The group could not agree on adding text in the standard to provide guidance on how a non-AP MLD manages EMLSR/NSTR conditions while participating on a TDLS link. This was despite of having offline email discussions on the topic for many weeks. Several members are of the opinion that standard doesn't need to say anything and leave it to implementation. Implementations can use existing tools such as PM bit set to 1 to manage AP's transmissions (when TDLS link is active) and TDLS peer PSM frames to setup power-save periods to manage peer STAs transmissions (when infra link is active). Furthermore, implementations can also use other mechanisms such as Channel Usage procedure (11.21.15) to coordinate infra and p2p transmissions.> |
| 10060 | Morteza Mehrnoush | 35.3.21.1 | 470.60 | If non-AP MLD is operating in EMLSR mode, and one STA of non-AP MLD wants to extablish a TDLS link with another device, there will be some limitations. The other deivce could be legacy device or EHT device (MLD and non-MLD); if it's a legacy deivce, it cannot initiate frame exchange considering the EMLSR rules; if it's a EHT device, it needs some information from the non-AP MLD which is operating in EMLSR mode like padding delay, etc, to be able to do the TDLS operation when the non-AP MLD operates in EMLSR mode for some scenarios. | there is no description of TDLS procedure when non-AP MLD operates in EMLSR mode and one of the STAs establishes a TDLS direct with anohter device; please add text to propose a solution for this. | Rejected—  This CID is discussed on September 26, 2022 with 22/1586r2, but no straw poll is conducted yet.  This CID is discussed on November 17, 2022 with 22/1586r2. The straw poll results are 31 Yes, 45 No, 29 Abstain.  Abhishek Patil 22/1586r2  Technical Notes <The group could not agree on adding text in the standard to provide guidance on how a non-AP MLD manages EMLSR/NSTR conditions while participating on a TDLS link. This was despite of having offline email discussions on the topic for many weeks. Several members are of the opinion that standard doesn't need to say anything and leave it to implementation. Implementations can use existing tools such as PM bit set to 1 to manage AP's transmissions (when TDLS link is active) and TDLS peer PSM frames to setup power-save periods to manage peer STAs transmissions (when infra link is active). Furthermore, implementations can also use other mechanisms such as Channel Usage procedure (11.21.15) to coordinate infra and p2p transmissions.> |
| 10061 | Morteza Mehrnoush | 35.3.21.1 | 470.60 | There is no text in spec to explain the TDLS power save procedure for the non-AP MLD which establishes TDLS direct link over a single link. The description of the procedure and solution to potential issues for the non-AP MLD operating in NSTR/EMLSR/EMLMR modes needs to be discussed. | as in comment | Rejected—  This CID is discussed on September 26, 2022 with 22/1586r2, but no straw poll is conducted yet.  This CID is discussed on November 17, 2022 with 22/1586r2. The straw poll results are 31 Yes, 45 No, 29 Abstain.  Abhishek Patil 22/1586r2  Technical Notes <The group could not agree on adding text in the standard to provide guidance on how a non-AP MLD manages EMLSR/NSTR conditions while participating on a TDLS link. This was despite of having offline email discussions on the topic for many weeks. Several members are of the opinion that standard doesn't need to say anything and leave it to implementation. Implementations can use existing tools such as PM bit set to 1 to manage AP's transmissions (when TDLS link is active) and TDLS peer PSM frames to setup power-save periods to manage peer STAs transmissions (when infra link is active). Furthermore, implementations can also use other mechanisms such as Channel Usage procedure (11.21.15) to coordinate infra and p2p transmissions.> |
| 10367 | Tomoko Adachi | 35.3.21 | 0.00 | When an AP MLD having an NSTR link pair with a non-AP MLD and the non-AP MLD starts direct link communication in one of the NSTR link pair with a peer STA, as the non-AP MLD cannot receive frames on the other link, the AP MLD needs to be aware of which link is used for direct link communication in order to select the proper link where the non-AP MLD can receive frames from the AP MLD. | Add a mechanism or constraints to solve the problem. One way is to add a mechanism for an AP MLD to know when the NSTR link pair is used at the non-AP MLD for direct link communication. Or, add a rule on the link that can be used as direct link communication when it is one of the NSTR link pair so that the AP can just monitor the link without pior knowledge to the direct link. Or, only allow direct link(s) when the non-AP MLD can perform STR on those links. | Rejected—  This CID is discussed on September 26, 2022 with 22/1586r2, but no straw poll is conducted yet.  This CID is discussed on November 17, 2022 with 22/1586r2. The straw poll results are 31 Yes, 45 No, 29 Abstain.  Abhishek Patil 22/1586r2  Technical Notes <The group could not agree on adding text in the standard to provide guidance on how a non-AP MLD manages EMLSR/NSTR conditions while participating on a TDLS link. This was despite of having offline email discussions on the topic for many weeks. Several members are of the opinion that standard doesn't need to say anything and leave it to implementation. Implementations can use existing tools such as PM bit set to 1 to manage AP's transmissions (when TDLS link is active) and TDLS peer PSM frames to setup power-save periods to manage peer STAs transmissions (when infra link is active). Furthermore, implementations can also use other mechanisms such as Channel Usage procedure (11.21.15) to coordinate infra and p2p transmissions.> |
| 10660 | Abhishek Patil | 35.3.21 | 470.57 | Baseline spec provides Channel Usage feature to enable an AP/non-AP coordinate the channel to use for p2p operation so that it doesn't interfere with infra-BSS operation. TGbe spec should explore utilizing and if needed expanding this feature for p2p operation when at least one of the link between the AP and non-AP MLD is an nSTR link. | As in comment | Rejected—  This CID is discussed on September 26, 2022 with 22/1586r2, but no straw poll is conducted yet.  This CID is discussed on November 17, 2022 with 22/1586r2. The straw poll results are 31 Yes, 45 No, 29 Abstain.  Abhishek Patil 22/1586r2  Technical Notes <The group could not agree on adding text in the standard to provide guidance on how a non-AP MLD manages EMLSR/NSTR conditions while participating on a TDLS link. This was despite of having offline email discussions on the topic for many weeks. Several members are of the opinion that standard doesn't need to say anything and leave it to implementation. Implementations can use existing tools such as PM bit set to 1 to manage AP's transmissions (when TDLS link is active) and TDLS peer PSM frames to setup power-save periods to manage peer STAs transmissions (when infra link is active). Furthermore, implementations can also use other mechanisms such as Channel Usage procedure (11.21.15) to coordinate infra and p2p transmissions.> |
| 11158 | Boon Loong Ng | 35.3.21 | 470.55 | TDLS operation with a non-AP MLD can be impacted by NSTR constraints of the non-AP MLD or peer non-AP MLD hosting that TDLS peer STA. | A procedure to handle the TDLS operation with MLD under NSTR constraints needs be described in the spec. | Rejected—  This CID is discussed on September 26, 2022 with 22/1586r2, but no straw poll is conducted yet.  This CID is discussed on November 17, 2022 with 22/1586r2. The straw poll results are 31 Yes, 45 No, 29 Abstain.  Abhishek Patil 22/1586r2  Technical Notes <The group could not agree on adding text in the standard to provide guidance on how a non-AP MLD manages EMLSR/NSTR conditions while participating on a TDLS link. This was despite of having offline email discussions on the topic for many weeks. Several members are of the opinion that standard doesn't need to say anything and leave it to implementation. Implementations can use existing tools such as PM bit set to 1 to manage AP's transmissions (when TDLS link is active) and TDLS peer PSM frames to setup power-save periods to manage peer STAs transmissions (when infra link is active). Furthermore, implementations can also use other mechanisms such as Channel Usage procedure (11.21.15) to coordinate infra and p2p transmissions.> |
| 11657 | Morteza Mehrnoush | 35.3.21.1 | 470.60 | If non-AP MLD is operating in EMLSR mode, and one STA of non-AP MLD wants to establish a TDLS link with another device, there will be some limitations. The other device could be legacy device or EHT device (MLD and non-MLD); if it's a legacy device, it cannot initiate frame exchange considering the EMLSR rules; if it's a EHT device, it needs some information from the non-AP MLD which is operating in EMLSR mode like padding delay, etc, to be able to do the TDLS operation when the non-AP MLD operates in EMLSR mode for some scenarios. | there is no description of TDLS procedure when non-AP MLD operates in EMLSR mode and one of the STAs establishes a TDLS direct with another device; please add text to propose a solution for this. | Rejected—  This CID is discussed on September 26, 2022 with 22/1586r2, but no straw poll is conducted yet.  This CID is discussed on November 17, 2022 with 22/1586r2. The straw poll results are 31 Yes, 45 No, 29 Abstain.  Abhishek Patil 22/1586r2  Technical Notes <The group could not agree on adding text in the standard to provide guidance on how a non-AP MLD manages EMLSR/NSTR conditions while participating on a TDLS link. This was despite of having offline email discussions on the topic for many weeks. Several members are of the opinion that standard doesn't need to say anything and leave it to implementation. Implementations can use existing tools such as PM bit set to 1 to manage AP's transmissions (when TDLS link is active) and TDLS peer PSM frames to setup power-save periods to manage peer STAs transmissions (when infra link is active). Furthermore, implementations can also use other mechanisms such as Channel Usage procedure (11.21.15) to coordinate infra and p2p transmissions.> |
| 13081 | Chittabrata Ghosh | 35.3.21.2 | 471.12 | The current spec text for the TDLS operation only works when all the links of the non-AP MLD has STR link relation, however when the links of non-AP MLD have NSTR link relation (lets say L1 and L2 are NSTR link pair), the peer STA of non-AP MLD may initiate PPDU over L1 and AP of AP MLD may initiate PPDU over L2, and the end time of the PPDUs are not aligned, so the response frame by the non-AP MLD may corrupts either of the PPDUs. A mechanism to prevent such a self interference among NSTR link pair is needed. | as in comment | Rejected—  This CID is discussed on September 26, 2022 with 22/1586r2, but no straw poll is conducted yet.  This CID is discussed on November 17, 2022 with 22/1586r2. The straw poll results are 31 Yes, 45 No, 29 Abstain.  Abhishek Patil 22/1586r2  Technical Notes <The group could not agree on adding text in the standard to provide guidance on how a non-AP MLD manages EMLSR/NSTR conditions while participating on a TDLS link. This was despite of having offline email discussions on the topic for many weeks. Several members are of the opinion that standard doesn't need to say anything and leave it to implementation. Implementations can use existing tools such as PM bit set to 1 to manage AP's transmissions (when TDLS link is active) and TDLS peer PSM frames to setup power-save periods to manage peer STAs transmissions (when infra link is active). Furthermore, implementations can also use other mechanisms such as Channel Usage procedure (11.21.15) to coordinate infra and p2p transmissions.> |
| 13083 | Chittabrata Ghosh | 35.3.21.1 | 470.60 | If non-AP MLD is operating in EMLSR mode, and one STA of non-AP MLD wants to extablish a TDLS link with another device, there will be some limitations. The other deivce could be legacy device or EHT device (MLD and non-MLD); if it's a legacy deivce, it cannot initiate frame exchange considering the EMLSR rules; if it's a EHT device, it needs some information from the non-AP MLD which is operating in EMLSR mode like padding delay, etc, to be able to do the TDLS operation when the non-AP MLD operates in EMLSR mode for some scenarios. | there is no description of TDLS procedure when non-AP MLD operates in EMLSR mode and one of the STAs establishes a TDLS direct with anohter device; please add text to propose a solution for this. | Rejected—  This CID is discussed on September 26, 2022 with 22/1586r2, but no straw poll is conducted yet.  This CID is discussed on November 17, 2022 with 22/1586r2. The straw poll results are 31 Yes, 45 No, 29 Abstain.  Abhishek Patil 22/1586r2  Technical Notes <The group could not agree on adding text in the standard to provide guidance on how a non-AP MLD manages EMLSR/NSTR conditions while participating on a TDLS link. This was despite of having offline email discussions on the topic for many weeks. Several members are of the opinion that standard doesn't need to say anything and leave it to implementation. Implementations can use existing tools such as PM bit set to 1 to manage AP's transmissions (when TDLS link is active) and TDLS peer PSM frames to setup power-save periods to manage peer STAs transmissions (when infra link is active). Furthermore, implementations can also use other mechanisms such as Channel Usage procedure (11.21.15) to coordinate infra and p2p transmissions.> |
| 13084 | Chittabrata Ghosh | 35.3.21.1 | 470.60 | There is no text in spec to explain the TDLS power save procedure for the non-AP MLD which establishes TDLS direct link over a single link. The description of the procedure and solution to potential issues for the non-AP MLD operating in NSTR/EMLSR/EMLMR modes needs to be discussed. | as in comment | Rejected—  This CID is discussed on September 26, 2022, but no straw poll is conducted yet.  Abhishek Patil 22/1586r2  Technical Notes <The group could not agree on adding text in the standard to provide guidance on how a non-AP MLD manages EMLSR/NSTR conditions while participating on a TDLS link. This was despite of having offline email discussions on the topic for many weeks. Several members are of the opinion that standard doesn't need to say anything and leave it to implementation. Implementations can use existing tools such as PM bit set to 1 to manage AP's transmissions (when TDLS link is active) and TDLS peer PSM frames to setup power-save periods to manage peer STAs transmissions (when infra link is active). Furthermore, implementations can also use other mechanisms such as Channel Usage procedure (11.21.15) to coordinate infra and p2p transmissions.> |
| 13635 | Rubayet Shafin | 35.3.21.2 | 471.09 | Whenever, there is a peer-to-peer link (e.g. TDLS link) between any pair of STAs affiliated with a pair of non-AP MLDs over one link, and if any of the non-AP MLDs is not STR capable over any of the links, the other NSTR link(s) become essentially ineffective. Consider the following scenario that illustrates this situation--Assume that MLD\_S and MLD\_R are two non-AP MLDs and MLD\_A is an AP MLD. STA1 and STA2 are two non-AP STAs affiliated with the non-AP MLD, MLD\_S; STA3 and STA4 are two non-AP STAs affiliated with non-AP MLD, MLD\_R; and AP1 and AP2 are two APs affiliated with AP MLD, MLD\_A. Two links have been set up between MLD\_S and MLD\_A--- one between STA1 and AP1 over Link 1, and the other between STA2 and AP2 over Link 2. Moreover, two links have been set up between MLD\_R and MLD\_A--- one between STA3 and AP1 over Link 1, and the other between STA4 and AP2 over Link 2. STA3 and STA4, operating on Link 1 and Link 2, respectively, form an NSTR link pair. Now, a TDLS link has been established between STA1 and STA3. When STA3 is communicating to STA1 over the TDLS direct link, AP MLD, MLD\_A, usually is not aware of the communication over the TDLS link. MLD\_A is aware of MLD\_R' s NSTR capability; so without the TDLS link as long as STA3 is not transmitting to AP1 over Link 1, AP2 can perform downlink transmission to STA4 over Link 2. However, over the TDLS direct link, if STA3 is transmitting to STA1, then STA4 would not be able to receive packets from AP2 over Link2. | Spec needs to provide solution/guideline for handling NSTR issue when one or more non-AP STAs, affiliated with a non-AP MLD and forming NSTR link pair(s), establish TDLS direct link with one or more non-AP STAs affiliated with another non-AP MLD. | Rejected—  This CID is discussed on September 26, 2022 with 22/1586r2, but no straw poll is conducted yet.  This CID is discussed on November 17, 2022 with 22/1586r2. The straw poll results are 31 Yes, 45 No, 29 Abstain.  Abhishek Patil 22/1586r2  Technical Notes <The group could not agree on adding text in the standard to provide guidance on how a non-AP MLD manages EMLSR/NSTR conditions while participating on a TDLS link. This was despite of having offline email discussions on the topic for many weeks. Several members are of the opinion that standard doesn't need to say anything and leave it to implementation. Implementations can use existing tools such as PM bit set to 1 to manage AP's transmissions (when TDLS link is active) and TDLS peer PSM frames to setup power-save periods to manage peer STAs transmissions (when infra link is active). Furthermore, implementations can also use other mechanisms such as Channel Usage procedure (11.21.15) to coordinate infra and p2p transmissions.> |
| 10627 | Abhishek Patil | 35.3.5.1 | 422.12 | in the future, advances in Wi-Fi technology would make it possible for an AP MLD to setup more than one link on the same channel. Therefore, TGbe should not put an artificial bound on what can be achieved by future Wi-Fi generations. | Either delete this paragraph or tie it to dot11EHTBaselineFeatureOnly set to true. | Rejected—  This CID is discussed on October 19, 2022, but no straw poll is conducted yet.  Abhishek Patil 22/1690r5  Technical Notes <The group discussed the changes to add the MIB dot11EHTBaselineFeatureOnly. However, the MIB is removed from D2.3 now, and some members had a different opinion and want to keep the sentence. The group could not agree on a suitable text that would satisfy everyone.> |
| 13876 | Ming Gan | 35.3.5.1 | 422.24 | Change this note to be normative text since this is related to multiple links and not mentioned in other places | please change the note to be normative text | Rejected—  This CID is discussed on October 19, 2022, but no straw poll is conducted yet.  Abhishek Patil 22/1690r5  Technical Notes <The group discussed the changes and there were suggestions to delete the NOTE and add normative text to clause 11.1.3.8.5. However, some members had a different opinion and the group could not agree on a suitable text that would satisfy everyone.> |
| 11179 | Joseph Levy | 35.3.5.1 | 422.12 | Stating that an MLD "ensures that" is not a requirement, the specification should state that the MLD "shall ensure that". | Replace: "An MLD that requests or accepts multi-link (re)setup for any two links ensures that each link is located on different nonoverlapping channels." With: "An MLD that sends a (Re)Association Request or Response frame containing a Basic Multi-Link element shall ensure that all the links in the Basic Multi-Link element are on channels that do not have any overlap." | Rejected—  This CID is discussed on October 19, 2022, but no straw poll is conducted yet.  Abhishek Patil 22/1690r5  Technical Notes <The group discussed the changes and there were suggestions to delete the NOTE and add normative text to clause 11.1.3.8.5. However, some members had a different opinion and the group could not agree on a suitable text that would satisfy everyone.> |
| 11598 | Vishnu Ratnam | 35.3.5.1 | 422.24 | Note 3: Doesn't this note have to be updated given that the group-addressed traffic for other links of the AP MLD are also indicated? | As in comment | Rejected—  This CID is discussed on October 19, 2022, but no straw poll is conducted yet.  Abhishek Patil 22/1690r5  Technical Notes <The group discussed the changes and there were suggestions to delete the NOTE and add normative text to clause 11.1.3.8.5. However, some members had a different opinion and the group could not agree on a suitable text that would satisfy everyone.> |
| 12617 | Arik Klein | 35.3.5.1 | 422.25 | There is a mismatch between the requirement to assign an AID to a non-AP MLD between the sentence in P422L20, where the AP MLD shall assign the AID and the following Note 3 on P422L25, which says that "AP affiliated with AP MLD does not assign AID to non-AP MLD...." Please align the conflict, as proposed. | In Note 3, Please replace the "an AP affiliated with an AP MLD does not assign, to a non-AP MLD an AID value that is less than..." with "an AP MLD does not assign..." so it will be aligned with the language in the preceding paragraph which says that "An AP MLD shall assign a single AID.." | Rejected—  This CID is discussed on October 19, 2022, but no straw poll is conducted yet.  Abhishek Patil 22/1690r5  Technical Notes <The group discussed the changes and there were suggestions to delete the NOTE and add normative text to clause 11.1.3.8.5. However, some members had a different opinion and the group could not agree on a suitable text that would satisfy everyone.> |
| 11863 | Alfred Asterjadhi | 9.4.2.199 | 205.42 | Multi-Link Information element is providing the same functionality as this Link ID Bitmap field in the TWT element. Use one single way of signaling for simplicity. | As in comment. | Rejected—  This CID is discussed on October 27, 2022, but no straw poll is conducted yet.  Ming Gan 22/1746r4  Technical Notes <The group did not reach consensus on whether the two ways of signaling can be merged into one unified way> |
| 12245 | Stephen McCann | 9.2.4.7.10 | 127.50 | What is an "assisting AP". There are only 2 occurences of this term in clause 35.3.16.8.3 and it doesn't appear to be useful. | Change each occurrence of "assisting AP" in the draft to "AP" | Rejected—  This CID is discussed on October 27, 2022, but no straw poll is conducted yet.  Ming Gan 22/1746r4  Technical Notes <The group did not reach consensus on the definition of “assisting AP.> |
| 11249 | Peshal Nayak | 35.3.16.8.3 | 461.19 | If the AP receives such a request for assistance from multiple STAs, how does the AP know which STA to trigger first? If some STAs have packets that must be transmitted within a certain amount of time and if the STA is not assisted by the AP before this deadline, the STA may drop the packet and AP's help may not be useful. | Spec needs to define a method by which the STA can also indicate to the AP the time before which it must be triggered | Rejected—  This CID is discussed on September 26, 2022 with 22/1454r1.  This CID is discussed on November 14, 2022 with 22/1454r2. The straw poll results are 39 Yes, 24 No, 27 Abstain.  Abdel Ajami 22/1454r2  Technical Notes <Main concern mentioned by members was that it is late to address in TGbe> |
| 12768 | Romain GUIGNARD | 4.5.6.3 | 60.37 | The support for predictable latency is based on statistical approach (QoS characteristics) which is well adapted for periodic traffic. The standard should also consider the aperiodic low latency traffic (control command, almost expired time-to-live packets for high reliability traffic). | Please consider signalling such as BSR to inform AP about instantaneous low latency needs. | Rejected—  This CID is discussed on September 26, 2022 with 22/1454r1.  This CID is discussed on November 14, 2022 with 22/1454r2. The straw poll results are 39 Yes, 24 No, 27 Abstain.  Abdel Ajami 22/1454r2  Technical Notes <Main concern mentioned by members was that it is late to address in TGbe> |
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