IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| LB266 Comment Resolution Clause 35.3.17 EMLSR Part1 | | | | |
| Date: 2022-7-18 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Minyoung Park | Intel Corporation |  |  | Minyoung.park@intel.com |
|  |  |  |  |  |
|  |  |  |  |  |

Abstract

This submission proposes comment resolution(s) for the following 32 CID(s) received in LB266 on TGbe D2.0 related to 35.3.17 EMLS Operation:

CIDs:

12410, 12733, 12850, 12852, 12853, 12854, 12855, 10037, 11649, 13077,

11595, 10056, 11654, 13079, 10057, 13080, 11655, 10052, 11756, 12470,

10508, 10038, 10777, 12812, 13809, 10102, 11757, 13408, 13004, 14076,

11453, 12672

Revisions:

* Rev 0: Initial version of the document.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CID** | **Commenter** | **Clause Number** | **Page.**  **Line** | **Comment** | **Proposed Change** | **Resolution** |
| 12410 | Juseong Moon | 35.3.17 | 461.56 | EML OMN procedure needs to consider mismatch between TID-to-Link mapping and EMLSR links. When a TID is mapped to a link which is not selected as EMLSR links and AP needs to transmit a data frame of that TID, AP needs to change EMLSR links with EML OMN procedure. | As in comment | Rejected.  Since the TID-to-Link mapping and the EMLSR link selection are all decided by a non-AP MLD, for a reasonable implementation of 802.11be shouldn’t have such a problem. |
| 12733 | Pascal VIGER | 35.3.17 | 461.56 | Are an EMLMR non AP MLD and an EMLSR non AP MLDs allowed to be triggered by a same Initial frame ? | Please confirm the behavior. | Rejected.  This is invalid comment. The commenter is asking a question. |
| 12850 | Mikael Lorgeoux | 35.3.17 | 461.56 | In EMLSR mode, for untriggered UL transmission, considering EDCA backoff procedure independently for each EMLSR link is not adapted as it doesn't take into account that only one EMLSR link is usabled at a time. | For untriggered uplink transmission in EMLSR mode, specify an EDCA backoff procedure taking into account the dependencies between EMLSR links | Rejected.  The following sentences in the subclause indicates that any one STA operating on the EMLSR links may initiate frame exchanges and follows the EDCA rules in 10.23.2.  “— Only one STA affiliated with the non-AP MLD that is operating on one of the EMLSR links may initiate frame exchanges with the AP MLD.  NOTE 3—A STA affiliated with a non-AP MLD operating in the EMLSR mode does not need to transmit an initial Control frame to initiate frame exchanges with the AP MLD and follows the rules defined in 10.3.2.4 (Setting and resetting the NAV) and in 10.23.2 (HCF contention based channel access (EDCA)) to access the WM.” |
| 12852 | Mikael Lorgeoux | 35.3.17 | 461.56 | Lack of rules for an efficient operation of EMLSR mode regarding uplink TID-To-Link Mapping. Especially, in some situations, EMLSR links may be not in line with the uplink TID-To-Link mapping in use. | Speficy rules for EMLSR links regarding uplink TID-To-Link mapping. | Rejected.  The comment does not clearly describe what rules are lacking for an efficient operation.  Since the TID-to-Link mapping and the EMLSR link selection are all decided by a non-AP MLD, for a reasonable implementation of 802.11be shouldn’t have such a problem. |
| 12853 | Mikael Lorgeoux | 35.3.17 | 461.56 | Lack of rules for an efficient operation of EMLSR mode regarding uplink TID-To-Link Mapping. Especially, in some situations, the transmitted BSRP TF (i.e. Initial Ctrl frame) may be not in line with the uplink TID-To-Link mapping in use. | Specify rules for transmission of BSRP TF regarding uplink TID-To-Link mapping. | Rejected.  BSRP is a control frame and doesn’t have mapped TID. |
| 12854 | Mikael Lorgeoux | 35.3.17 | 461.56 | Lack of rules for an efficient operation of EMLSR mode regarding uplink TID-To-Link Mapping. Especially, in some situations, the buffered data reported in BSR sent in reponse to BSRP TF may be not in line with the uplink TID-To-Link mapping in use. | Specify rules for buffered data reporting in BSR regarding uplink TID-To-Link mapping. | Rejected.  As long as a non-AP MLD that is triggered responds with a frame right after a BSRP, there is no issue with the EMLSR operation. |
| 12855 | Mikael Lorgeoux | 35.3.17 | 461.56 | Current EMLSR operation mandates that the EMLSR link to be used for frame exchange is the link in which the initial control frame was received. For uplink traffic transmission, depending on uplink TID-To-Link mapping, it may be inefficient. | Specify an EMLSR operation allowing to select the EMLSR link to be used for frame exchange among the set of EMLSR links. | Rejected.  The following sentences in D2.0 allows any one STA operating on the EMLSR links may initiate frame exchanges. The note also clarifies that for the uplink the initial control frame is not needed:  “— Only one STA affiliated with the non-AP MLD that is operating on one of the EMLSR links may initiate frame exchanges with the AP MLD.  NOTE 3—A STA affiliated with a non-AP MLD operating in the EMLSR mode does not need to transmit an initial Control frame to initiate frame exchanges with the AP MLD and follows the rules defined in 10.3.2.4 (Setting and resetting the NAV) and in 10.23.2 (HCF contention based channel access (EDCA)) to access the WM.” |
| 10037 | Morteza Mehrnoush | 35.3.17 | 461.58 | What is the TID to link mapping that should be used over the EMLSR links? IMO, it should be all TID to all link mapping as the EMLSR STAs can do frame exchange over one link at a time; using all TID to all link mapping gives a better oppurtunity to deliver high-QoS/Low-latency traffics (in UL/DL) over the first link that it gets the access or is a TXOP reponder. | Please add text to explain. | Rejected.  TID-to-link mapping is an implementation choice of a non-AP MLD and doesn’t need to be specified in the 11be specification. The current standard doesn’t prevent what the comment is suggesting and doesn’t have any interop issue. |
| 11649 | Morteza Mehrnoush | 35.3.17 | 461.58 | What is the TID to link mapping that should be used over the EMLSR links? IMO, it should be all TID to all link mapping as the EMLSR STAs can do frame exchange over one link at a time; using all TID to all link mapping gives a better opportunity to deliver high-QoS/Low-latency traffics (in UL/DL) over the first link that it gets the access or is a TXOP responder. | Please add text to explain. | Rejected.  TID-to-link mapping is an implementation choice of a non-AP MLD and doesn’t need to be specified in the 11be specification. The current standard doesn’t prevent what the comment is suggesting and doesn’t have any interop issue. |
| 13077 | Chittabrata Ghosh | 35.3.17 | 461.58 | What is the TID to link mapping that should be used over the EMLSR links? IMO, it should be all TID to all link mapping as the EMLSR STAs can do frame exchange over one link at a time; using all TID to all link mapping gives a better oppurtunity to deliver high-QoS/Low-latency traffics (in UL/DL) over the first link that it gets the access or is a TXOP reponder. | Please add text to explain. | Rejected.  TID-to-link mapping is an implementation choice of a non-AP MLD and doesn’t need to be specified in the 11be specification. The current standard doesn’t prevent what the comment is suggesting and doesn’t have any interop issue. |
| 11595 | Vishnu Ratnam | 35.3.17 | 462.34 | A non-default TID-to-link mapping can degrade the performance of some TIDs in EMLSR operating mode. | Define a mechanism where upon switch to EMLSR mode, the TID-to-link mapping reverts to default TID-to-link mapping. Subsequently a new mapping can be negotiated if required. | Rejected.  TID-to-link mapping is an implementation choice of a non-AP MLD and doesn’t need to be specified in the 11be specification. The current standard doesn’t prevent what the comment is suggesting and doesn’t have any interop issue. |
| 10056 | Morteza Mehrnoush | 35.3.17 | 461.58 | non-AP MLD in EMLSR mode can do frame exchnage with the AP MLD (STR links) only over one link (L1) at a time, and the EMLSR STA cannot do CCA over the other link (L2) before the end of current frame sequence plus "PIFS+aRxPhyStartDelay+TransitionDelay" period. However the AP MLD can do the CCA over the other link (L2), and so before EMLSR STA returning to listening operation, the AP MLD sense the channel for AIFS over L2 and start frame exchange over L2. This gives a much higher advantage to AP MLD which leads to higher DL performance and worse UL performance. This issue is worse for the scenario where there is one non-AP MLD in EMLSR mode which is delivering UL and DL traffic to AP MLD. A mechansim is needed to prevent such a imbalance in DL traffic delivery. | as in comment | Rejected.  In a dense network scenario, it is better to rely on a trigger frame for uplink traffic flows from many users. A good example is MU EDCA that deprioritizes uplink EDCA traffic and have users rely on a trigger frame for uplink data transmission. For the single non-AP MLD scenario example in the comment, since the AP MLD and the non-AP MLD are exchanging frames for an application running on the non-AP MLD, both UL/DL traffic flows are important to the MLDs and the reasonably implemented AP MLD should use right parameters and tools to deliver and receive data frames to and from the non-AP MLD. |
| 11654 | Morteza Mehrnoush | 35.3.17 | 461.58 | non-AP MLD in EMLSR mode can do frame exchange with the AP MLD (STR links) only over one link (L1) at a time, and the EMLSR STA cannot do CCA over the other link (L2) before the end of current frame sequence plus "PIFS+aRxPhyStartDelay+TransitionDelay" period. However the AP MLD can do the CCA over the other link (L2), and so before EMLSR STA returning to listening operation, the AP MLD sense the channel for AIFS over L2 and start frame exchange over L2. This gives a much higher advantage to AP MLD which leads to higher DL performance and worse UL performance. This issue is worse for the scenario where there is one non-AP MLD in EMLSR mode which is delivering UL and DL traffic to AP MLD. A mechanism is needed to prevent such a imbalance in DL traffic delivery. | as in comment | Rejected.  In a dense network scenario, it is better to rely on a trigger frame for uplink traffic flows from many users. A good example is MU EDCA that deprioritizes uplink EDCA traffic and have users rely on a trigger frame for uplink data transmission. For the single non-AP MLD scenario example in the comment, since the AP MLD and the non-AP MLD are exchanging frames for an application running on the non-AP MLD, both UL/DL traffic flows are important to the MLDs and the reasonably implemented AP MLD should use right parameters and tools to deliver and receive data frames to and from the non-AP MLD. |
| 13079 | Chittabrata Ghosh | 35.3.17 | 461.58 | non-AP MLD in EMLSR mode can do frame exchnage with the AP MLD (STR links) only over one link (L1) at a time, and the EMLSR STA cannot do CCA over the other link (L2) before the end of current frame sequence plus "PIFS+aRxPhyStartDelay+TransitionDelay" period. However the AP MLD can do the CCA over the other link (L2), and so before EMLSR STA returning to listening operation, the AP MLD sense the channel for AIFS over L2 and start frame exchange over L2. This gives a much higher advantage to AP MLD which leads to higher DL performance and worse UL performance. This issue is worse for the scenario where there is one non-AP MLD in EMLSR mode which is delivering UL and DL traffic to AP MLD. A mechansim is needed to prevent such a imbalance in DL traffic delivery. | as in comment | Rejected.  In a dense network scenario, it is better to rely on a trigger frame for uplink traffic flows from many users. A good example is MU EDCA that deprioritizes uplink EDCA traffic and have users rely on a trigger frame for uplink data transmission. For the single non-AP MLD scenario example in the comment, since the AP MLD and the non-AP MLD are exchanging frames for an application running on the non-AP MLD, both UL/DL traffic flows are important to the MLDs and the reasonably implemented AP MLD should use right parameters and tools to deliver and receive data frames to and from the non-AP MLD. |
| 10057 | Morteza Mehrnoush | 35.3.17 | 461.58 | When the phy rate of the EMLSR links are different (e.g. when the BW of the links are different) each STA of non-AP MLD perfrom channel access independently over the two links; considering the case where there is no OBSS load, EMLSR STAs equally (randomly) access one of the EMLSR links at a time which causes performance degradation compared to always accessing the higher phy rate link (effective total phy rate would be average of the phy rates of the links, i.e. lower and higher phy rate). A channel access mechanism for EMLSR is needed to resolve this issue. | Please define a channel access mechanism for resolving the issue described in the comment. | Rejected.  In the given scenario where there is no OBSS traffic, it is better to disable the EMLSR mode and use the link that has a larger capacity (i.e., bandwidth).  Also an AP MLD can make a smart decision which link to use in different network situations. |
| 13080 | Chittabrata Ghosh | 35.3.17 | 461.58 | When the phy rate of the EMLSR links are different (e.g. when the BW of the links are different) each STA of non-AP MLD perfrom channel access independently over the two links; considering the case where there is no OBSS load, EMLSR STAs equally (randomly) access one of the EMLSR links at a time which causes performance degradation compared to always accessing the higher phy rate link (effective total phy rate would be average of the phy rates of the links, i.e. lower and higher phy rate). A channel access mechanism for EMLSR is needed to resolve this issue. | Please define a channel access mechanism for resolving the issue described in the comment. | Rejected.  In the given scenario where there is no OBSS traffic, it is better to disable the EMLSR mode and use the link that has a larger capacity (i.e., bandwidth).  Also an AP MLD can make a smart decision which link to use in different network situations. |
| 11655 | Morteza Mehrnoush | 35.3.17 | 461.58 | Each STA of non-AP MLD performs channel access independently over the EMLSR links; when the physical layer data rate of the EMLSR links are different (e.g. when the BW of the links are different) and considering a scenario with no OBSS load, EMLSR STAs randomly access one of the EMLSR links at a time to initiate TXOP, so the maximum effective phy rate is the average of the phy rates of the EMLSR links, i.e. average of lower and higher phy rate. This causes performance degradation compared to the case in which the MLD with EMLSR STAs first access the link with higher phy rate if both channels are idle. A channel access mechanism for EMLSR is needed to resolve this issue. | Please define a channel access mechanism for resolving the issue described in the comment. | Rejected.  In the given scenario where there is no OBSS traffic, it is better to disable the EMLSR mode and use the link that has a larger capacity (i.e., bandwidth). Also an AP MLD can make a smart decision which link to use in different network situations. |
| 10052 | Morteza Mehrnoush | 35.3.17 | 462.01 | When the non-AP MLD is operating in EMLSR mode, the TID to link mapping should not disable a link (no TID mapped to EMLSR link) in which the the EMLSR STA is operating on. | please add a text to clarify this. | Rejected.  How to map a certain TID to a link is an implementation choice of a non-AP MLD and it is not required for interoperability. |
| 11756 | Gaurav Patwardhan | 35.3.17 | 462.01 | Throughout subclause 35.3.17 the term "EMLSR mode" is used wherein it is better described as "EMLSR mode of operation". Replace the term "EMLSR mode" throughout the 35.3.17 subclause with "EMLSR mode of operation". Commenting on this particular line as a placeholder for the entire subclause. | as in comment | Rejected.  It is not clear why “EMLSR mode of operation” is better than “EMLSR mode”.  The spec defines as follows: “In EMLSR mode, a non-AP MLD shall follow the rules defined in this subclause.”  Using “EMLSR mode of operation” seems to make sentences longer and doesn’t help. |
| 12470 | Rajat Pushkarna | 35.3.17 | 462.05 | EMLSR links are specified before enabled links. There is a mismatch in the description. The links which are enabled can be EMLSR links. Please revise as links "EMLSR links are a specified set of the enabled links between the non-AP MLD and its associated AP MLD which operates in EMLSR mode" | As in comment | Rejected.  The EMLSR links are not specified before the enabled links.  There is no mismatch in the description of the EMLSR links.  In the current spec the EMLSR links are defined as follows: “A non-AP MLD may operate in the EMLSR mode on a specified set of the enabled links between the non-AP MLD and its associated AP MLD. The specified set of the enabled links in which the EMLSR mode is applied is called EMLSR links.” |
| 10508 | Eldad Perahia | 35.3.17 | 461.61 | "in a non-HT (duplicate) PPDU with one spatial stream". I do not believe term spatial stream applies to non-HT. Need to delete "with one spatial stream." | as in comment | Revised.  Agree with the commenter.  TGbe editor to make the changes with the CID tag (#10508) in doc.: IEEE 802.11-22/1181r0  [https://mentor.ieee.org/802.11/dcn/22/11-22-1181-00-00be-lb266-cr-cl35-emlsr-part1.docx] |

**35.3.17 Enhanced multi-link single radio operation**

The enhanced multi-link single radio (EMLSR) operation defined in this subclause allows a non-AP MLD  
with multiple receive chains to listen on the EMLSR links when the corresponding STAs affiliated with the  
non-AP MLD are in awake state as defined below for an initial Control frame sent by an AP affiliated with  
an AP MLD in a non-HT (duplicate) PPDU(#10508), followed by frame exchanges on the  
link on which the initial Control frame was received.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CID** | **Commenter** | **Clause Number** | **Page.**  **Line** | **Comment** | **Proposed Change** | **Resolution** |
| 10038 | Morteza Mehrnoush | 35.3.17 | 461.58 | What is the EMLSR behavior if all EMLSR STAs of the non-AP MLD except one goes to power save (doze state)? As there is only one link remaining in EMLSR mode, it should follow the single-link single-radio procedure. Add explanation to cover this case. | as in comment | Revised.  D2.0 defines an explicit signaling to disable the EMLSR mode and return to the single-link single radio operation. If a non-AP MLD wants to operate in the EMLSR mode with only a single link, the spec should allow that operation and leave it as an implementation choice.  Using the initial control frame even when there is only one STA awake is beneficial for power saving since a non-AP MLD can just look for the initial control frame and not other type of frames/PPDUs. However, the EMLSR Transition Delay time after the frame exchanges are over is not needed.  TGbe editor to make the changes with the CID tag (#10038) in doc.: IEEE 802.11-22/1181r0  [https://mentor.ieee.org/802.11/dcn/22/11-22-1181-00-00be-lb266-cr-cl35-emlsr-part1.docx] |
| 10777 | Chien-Fang Hsu | 35.3.17 | 461.58 | When there exists only one EMLSR link in awake state and others are on in doze state, the initial control frame to initialize DL traffic is redundant. To increase efficiency in this scenario, the specs should allow AP to omit initial control frame to intialize DL transmission. | Add rules allowing the AP to intialize DL transmission without initial control frame when only one EMLSR link is in awake state and others are in doze states. | Revised.  D2.0 defines an explicit signaling to disable the EMLSR mode and return to the single-link single radio operation. If a non-AP MLD wants to operate in the EMLSR mode with only a single link, the spec should allow that operation and leave it as an implementation choice.  Using the initial control frame even when there is only one STA awake is beneficial for power saving since a non-AP MLD can just look for the initial control frame and not other type of frames/PPDUs. However, the EMLSR Transition Delay time after the frame exchanges are over is not needed.  TGbe editor to make the changes with the CID tag (#10777) in doc.: IEEE 802.11-22/1181r0  [https://mentor.ieee.org/802.11/dcn/22/11-22-1181-00-00be-lb266-cr-cl35-emlsr-part1.docx] |
| 12812 | Laurent Cariou | 35.3.17 | 463.60 | When a non-AP MLD is in EMLSR mode and when only one STA that is operating on one of the EMLSR links is in awake state and the other STAs operating on the EMLSR links affiliated with the same non-AP MLD are in doze state, the non-AP MLD doesn't need to wait for the EMLSR Transition Delay time to switch to the listening operation. | Please add an exception as follows: "When there is only one STA in awake state operation on the EMLSR links, the non-AP MLD switches back to the listening operation after the end of the frame exchanges for both an AP initiated and a STA initiated cases without waiting for the EMLSR Transition Delay time." | Revised.  Agree with the commenter. When there is only one STA awake, the EMLSR Transition Delay time after the frame exchanges are over is not needed.  TGbe editor to make the changes with the CID tag (#12812) in doc.: IEEE 802.11-22/1181r0  [https://mentor.ieee.org/802.11/dcn/22/11-22-1181-00-00be-lb266-cr-cl35-emlsr-part1.docx] |

**TGbe Editor to make the following changes in the paragraph in P463L59 in Subclause 35.3.17 (Enhanced multi-link single radio operation) in TGbe D2.0:**

— The non-AP MLD shall be switched back to the listening operation on the EMLSR links after the  
time indicated in the EMLSR Transition Delay subfield of the EML Capabilities subfield in the  
Common Info field of the Basic Multi-Link element if any of the following conditions is met and this  
is defined as the end of the frame exchanges (#12812, 10777, 10038)except when there is only one STA in awake state and affiliated with the non-AP MLD operating on the EMLSR links the non-AP MLD switches back to the listening operation if any of the following conditions is met without waiting for the time indicated in the EMLSR Transition Delay subfield :

**TGbe Editor to make the following changes in the paragraph in P464L39 in Subclause 35.3.17 (Enhanced multi-link single radio operation) in TGbe D2.0:**

— When a STA of the non-AP MLD initiates a TXOP the following applies:  
• The non-AP MLD shall switch back to the listening operation on the EMLSR links after the time duration indicated in the EMLSR Transition Delay subfield after the end of the TXOP (#12812)except when there is only one STA in awake state and affiliated with the non-AP MLD operating on the EMLSR links the non-AP MLD switches back to the listening operation after the end of the TXOP without waiting for the time indicated in the EMLSR Transition Delay subfield.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CID** | **Commenter** | **Clause Number** | **Page.**  **Line** | **Comment** | **Proposed Change** | **Resolution** |
| 13809 | Yuchen Guo | 35.3.17 | 462.05 | "in which" should be "on which" | Change "in which" to "on which" | Accepted. |
| 10102 | Xiangxin Gu | 35.3.17 | 462.08 | "single-radio" -> "single radio" | As in the comment | Revised.  TGbe editor to make the changes with the CID tag (#10102) in doc.: IEEE 802.11-22/1181r0  [https://mentor.ieee.org/802.11/dcn/22/11-22-1181-00-00be-lb266-cr-cl35-emlsr-part1.docx] |
| 11757 | Gaurav Patwardhan | 35.3.17 | 462.08 | The "single-radio non-AP MLD" is not required for an EMLSR device as the device definition has the term "Single Radio" in it. | Delete "single-radio" | Rejected.  In the current spec D2.0, there is no definition called “EMLSR device”. |
| 13408 | Liwen Chu | 35.3.17 | 462.08 | The statement is not true for a non-AP MLD with eMLSR link set and STR link set. | Fix the issues mentioned in the comment | Rejected.  Disagree with the commenter. The statement is for a single radio non-AP MLD so the statement is correct. The commenter is commenting on a multi-radio non-AP MLD tha can operate in STR. |
| 13004 | Chunyu Hu | 35.3.17 | 462.09 | The function/behavior as described by the last sentence of this pargraph (line 8-12) is problematic to me.  The links corresponding to bit-0 in the EMLSR Link Bitmap subfield may not be set up at all, why they are in doze state?  If they are setup, then is this non-AP MLD still single-radio MLD -- how one tells from the association frame and differentiate from other case?  Also, why this relates to the power management state of the EMLSR links? | See comment. | Revised.  Response to the 1st question:  The following statement should only apply to enabled links.  “For the EMLSR mode enabled in a single-radio non-AP MLD, the STA(s) affiliated with the non-AP MLD that operates on the link(s) that corresponds to the bit position(s) of the EMLSR Link Bitmap subfield set to 0 shall be in doze state if a STA affiliated with the non-AP MLD that operates on one of the EMLSR links is in awake state.”  TGbe editor to make the changes with the CID tag (#10102) in doc.: IEEE 802.11-22/1181r0  [https://mentor.ieee.org/802.11/dcn/22/11-22-1181-00-00be-lb266-cr-cl35-emlsr-part1.docx]  Response to the 2nd question:  The statement applies to a single radio non-AP MLD. A non-AP MLD indicates which links will be enabled during the association.  Response to the 3rd question:  This is to support 3 link enabled single radio non-AP MLD case where only using 2 out of 3 enabled links for the EMLSR mode. For example, 2.4, 5, 6 links enabled case and using 5 and 6 links for EMLSR and not 2.4. So the 2.4 link needs to be in doze. |
| 14076 | Ming Gan | 35.3.17 | 462.11 | For the description after "if", does this mean all the STAs affiliated with non-AP MLD that operate on the EMLSR link can be in doze state? | Remove the condition | Rejected.  The sentence defines behavior of a single radio non-AP MLD. The “if” condition “if a STA affiliated with the non-AP MLD that operates on one of the EMLSR links is in awake state.” is required since if a STA operating on one of the EMLSR links is awake, other links that are not part of the EMLSR links have to be in doze because the non-AP MLD is a single radio non-AP MLD. When all the STAs on the EMLSR links are in doze, then a STA on the non-EMLSR links can be in awake state. |

**TGbe Editor to make the following changes in the paragraph in P462L4 in Subclause 35.3.17 (Enhanced multi-link single radio operation) in TGbe D2.0:**

A non-AP MLD may operate in the EMLSR mode on a specified set of the enabled links between the non-AP MLD and its associated AP MLD. The specified set of the enabled links (#13809)on which the EMLSR mode is applied is called EMLSR links. The EMLSR links shall be indicated in the EMLSR Link Bitmap subfield of the EML Control field of the EML Operating Mode Notification frame by setting the bit positions of the EMLSR Link Bitmap subfield to 1. For the EMLSR mode enabled in a (#10102)single radio non-AP MLD, the STA(s) affiliated with the non-AP MLD that operates on the enabled link(s) that corresponds to the bit position(s) of the EMLSR Link Bitmap subfield set to 0 shall be in doze state if a STA affiliated with the non-AP MLD that operates on one of the EMLSR links is in awake state.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CID** | **Commenter** | **Clause Number** | **Page.**  **Line** | **Comment** | **Proposed Change** | **Resolution** |
| 11453 | Gaurang Naik | 35.3.17 | 462.18 | Support for EMLSR and EMLMR is mutually exclusive at the non-AP MLD. Add normative text to specify this. | Add the following - 'A non-AP MLD with dot11EHTMLSROptionImplemented equal to true shall have dot11EHTEMLMROptionImplemented equal to false.' | Revised.  Agree with the commenter. The sentence has been added before the paragraph.  TGbe editor to make the changes with the CID tag (#11453) in doc.: IEEE 802.11-22/1181r0  [https://mentor.ieee.org/802.11/dcn/22/11-22-1181-00-00be-lb266-cr-cl35-emlsr-part1.docx] |
| 12672 | Arik Klein | 35.3.17 | 462.18 | According to P271L19 "For a non-AP MLD, the EMLSR Support subfield is set to 0 if the EMLMR Support subfield is set to 1". Thus, need to add the requirement for the setting of the EMLMR support subfield in the following sentence: "An MLD with dot11EHTEMLSROptionImplemented equal to true shall set the EML Capabilities Present subfield to 1 and shall set the EMLSR Support subfield of the Common Info field of the Basic Multi-Link element (9.4.2.312.2 (Basic Multi-Link element)) to 1 in all Management frames..." | Revise the sentence as follows: "An MLD with dot11EHTEMLSROptionImplemented equal to true shall set the EML Capabilities Present subfield to 1 and shall set the EMLSR Support subfield to 1 and the EMLMR Support subfield to 0 in the Common Info field of the Basic Multi-Link element (9.4.2.312.2 (Basic Multi-Link element)) in all Management frames..." | Rejected.  The paragraph defines normative behaviors for an MLD that includes both an AP MLD and a non-AP MLD. For an AP MLD, the suggested change is not correct since an AP MLD can support both EMLSR and EMLMR. |

**TGbe Editor to make the insert the following sentence right before the paragraph in P462L18 in Subclause 35.3.17 (Enhanced multi-link single radio operation) in TGbe D2.0:**

(#11453)A non-AP MLD with dot11EHTEMLSROptionImplemented equal to true shall have dot11EHTEMLMROptionImplemented equal to false.