IEEE P802.11
Wireless LANs

|  |
| --- |
| Recirc SA - CR for D6.0 CIDs  |
| Date: 2024-06-14 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Binita Gupta | Cisco Systems |  |  | binitag@cisco.com |
| Brian Hart | Cisco Systems |  |  | brianh@cisco.com |

 Abstract

This submission proposes resolutions for following CIDs received in TGbe Recirculation SA Ballot on P802.11be D6.0:

23001 23006 23008 23010 23043 23048 23049 23050 23051 23052

23053 23058 23059 23060 23061 23062 23063 23064 23065 23066

23067 23068 23069 23070 23084 23170 23016 23017 23171 23172

CIDs from Rev 3+:

23019, 23170

**Revisions:**

* Rev 0: Initial version of the document.
* Rev 1: Incorporated green tagging and edits suggested by Alfred
* Rev 2: Some changes made during the TGbe call.
* Rev 3: revised resolution for 23170 and added CID 23019
* Rev 4: minor update to CID 23019 resolution per offline feedback

***TGbe editor: The baseline for this document is 11be D6.0.***

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.***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CID** | **Clause** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 23019 | 35.3.6.1 | 540.39 | The Link Reconfiguration Operation Support subfield is currently defined to signal support for both a) the link reconfiguration add/delete operations, and b) the recommendation from AP MLD for link add/delete. The way this feature is being rolled out, only a) part is being rolled out initially and not the b) part. To avoid any future interop issues, it is better to separate the capability for these two aspects of the feature is separate bits. | Add a separate capability bit to indicate support for link reconfiguration recommendation from the AP MLD for link add/delete. | Revised Agree with the comment. A separate capability bit is proposed to indicate support for AP MLD recommendation for link reconfiguration feature. Related text changes are proposed.TGbe editor, please make the changes tagged by CID #23019 in 11-24/1028r4. |
| 23170 | 9.4.2.321.2.3 | 257.17 | Submitted on behalf of Po-Kai. For "Recommended MaxSimultaneous Links", it is clear that the fields regulate STR, but it is not clear if this include NSTR. The confusion is there because the description say "simultaneous frame exchange" but NSTR is "non simultaneous" In the previous round, there are interpretation for this field to include both STR and NSTR. If that is the case, clarify in the column. | Change "Recommended maximum number of enabled links that a non-AP MLD canoperate on for simultaneous frameexchanges. Reserved when carried in a frame that is not a Beacon frame or a broadcast Probe Response frame.Indicates the recommended maximum numbe" to "Recommended maximum number of enabled links that a non-AP MLD canoperate on for STR or NSTR frameexchanges. Reserved when carried in a frame that is not a Beacon frame or a broadcast Probe Response frame.Indicates the recommended maximum number" | RevisedAgree with the commenter. The Recommended MaxSimultaneous Links field applies for both STR and NSTR. Revised text as per the suggestion.TGbe editor, please make the changes tagged by CID #23170 in 11-24/1028r4.  |

**########## Start of changes for CID #23019 ##################**

**9.4.2.321.2.3 Common Info field of the Basic Multi-Link element**

**…**

The format of the MLD Capabilities And Operations subfield is defined in Figure 9-1001k (MLD Capabilities And Operations subfield format).

B0 B3 B4 B5 B6 B7 B11

|  |  |  |  |
| --- | --- | --- | --- |
| Maximum Number Of Simultaneous Links | SRS Support | TID-To-Link Mapping Negotiation Support | Frequency Separation For STR/ AP MLD Type Indication |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Bits: | 4 | 1 | 2 | 5 |
|  | B12 | B13 | B14 | B15 |

|  |  |  |  |
| --- | --- | --- | --- |
| AAR Support | Link Reconfiguration Operation Support | Aligned TWT Support | Link Reconfiguration Recommendation Support |

Bits: 1 1 1 1

**Figure 9-1001k—MLD Capabilities And Operations subfield format**

|  |  |  |
| --- | --- | --- |
| **Subfield** | **Definition** | **Encoding** |
| Link Reconfiguration Operation Support | Indicates support for ML reconfiguration operations for adding link(s) and deleting link(s) to/from the setup links of a non-AP MLD. | Set to 1 if dot11EHTLinkReconfigurationOp- erationActivated equal to trueSet to 0 otherwise.See 35.3.6.4 (Link reconfiguration to the ML setup). |
| Aligned TWT Support | Indicates support for an alignment or nonalignment of the TWTs across more than one link | For an MLD:Set to 1 to indicate that an MLD with which the STA is affiliated is capable of receiving a TWT setup frame that requests an alignment or nonalignment of the TWTs across more than one link. Set to 0 otherwise. |
| Link Reconfiguration Recommendation Support | Indicates support for AP MLD recommendation for ML reconfiguration operations for adding link(s) and deleting link(s) to/from the setup links of a non-AP MLD. | Set to 1 if dot11EHTLinkReconfigurationRecommendationActivated equal to trueSet to 0 otherwise.See 35.3.6.5 (﻿AP MLD recommendation for link reconfiguration). |
| NOTE—Indicating support for TTLM negotiation by setting the TID-To-Link Mapping Negotiation Support sub- field to a nonzero value also indicates support for negotiations applicable to all smaller values. Also see 35.3.7.2.1 (General) for rules related to performing ML (re)setup with an AP MLD that has the subfield set to a nonzero value. |

**﻿35.3.6 ML reconfiguration**

**35.3.6.1 General**

**…**

﻿An MLD that supports link reconfiguration operations for adding and

deleting links to/from the setup links as described in 35.3.6.4 (Link reconfiguration to the setup links), has the dot11EHTLinkReconfigurationOperationActivated

equal to true and shall set the Link Reconfiguration Operation Support subfield to 1 in the MLD Capabilities

And Operations subfield included in the Basic Multi-Link element and the Reconfiguration Multi-Link element that is transmitted by its affiliated STA(s).

An MLD that supports AP MLD recommendation for ML reconfiguration operations for adding link(s) and deleting link(s) to/from the setup links of a non-AP MLD ﻿as described in 35.3.6.5 (AP MLD recommendation for link reconfiguration) has the dot11EHTLinkReconfigurationRecommendationActivated equal to true and shall set the Link Reconfiguration Recommendation Support subfield to 1 in the MLD Capabilities And Operations subfield included in the Basic Multi-Link element and the Reconfiguration Multi-Link element that is transmitted by its affiliated STA(s).

NOTE: An MLD sets the Link Reconfiguration Recommendation Support subfield to 1 only when it has the Link Reconfiguration Operation Support subfield set to 1 as well.

**﻿35.3.6.5 AP MLD recommendation for link reconfiguration**

﻿An AP MLD that has dot11EHTLinkReconfigurationRecommendationActivated equal to true may recommend link(s) to be added and/or deleted to/from the setup links of an associated non-AP MLD that has the Link Reconfiguration Recommendation Support subfield set to 1 in the last received MLD Capabilities And Operations subfield either in the Basic Multi-Link element or in the Reconfiguration Multi-Link element transmitted by its affiliated non-AP STA(s), by sending an individually addressed Link Reconfiguration Notify frame to that non-AP MLD. The Link Reconfiguration Notify frame shall contain a Reconfiguration Multi-Link element that includes one Per-STA Profile subelement for each affiliated AP that the AP MLD is recommending to the non-AP MLD to add to or delete from its setup links.

***﻿*Annex C**

(normative)

**ASN.1 encoding of the MAC and PHY MIB**

**C.3 MIB Detail**

﻿Dot11EHTStationConfigEntry ::=

SEQUENCE {

dot11EHTPPEThresholdsRequired TruthValue,

dot11TIDtoLinkMappingActivated TruthValue,

dot11EHTEPCSPriorityAccessActivated TruthValue,

dot11MSDTimerDuration Unsigned32,

dot11MSDTXOPMax Unsigned32,

dot11MultiLinkActivated TruthValue,

dot11MLDAssociationSAQueryMaximumTimeout Unsigned32,

dot11EHTMCSFeedbackOptionImplemented INTEGER,

dot11EHTEMLSROptionImplemented TruthValue,

dot11EHTEMLSROptionActivated TruthValue,

dot11EHTEMLMROptionImplemented TruthValue,

dot11EHTEMLMROptionActivated TruthValue,

dot11OperationParameterUpdateImplemented TruthValue,

dot11EHTLinkReconfigurationOperationActivated TruthValue,

dot11MultiLinkTrafficIndicationActivated, TruthValue,

dot11NSTRStatusUpdateImplementated TruthValue,

dot11EHTEPCSPriorityAccessParamUnsolicitedModeSupport TruthValue,

dot11EHTEMLSREnablementOnOneLinkImplemented TruthValue,

dot11EHTBTMMLDRecommendationForMultipleAPsImplemented TruthValue,

dot11EHTLinkReconfigurationRecommendationActivated TruthValue

}

﻿dot11EHTLinkReconfigurationOperationActivated OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"This is a control variable.

It is written by an external management entity or the SME. Changes take effect as soon as practical in the implementation.

This attribute, when true, indicates support by the MLD for ML reconfiguration operations for adding and deleting link(s) to/from the setup links of a non-AP MLD. If the attribute is false, the MLD does not support ML reconfiguration operations for adding and deleting link(s) to/from the setup links of a non-AP MLD."

DEFVAL { false }

::= { dot11EHTStationConfigEntry 14 }

dot11EHTLinkReconfigurationRecommendationActivated OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"This is a control variable.

It is written by an external management entity or the SME. Changes take effect as soon as practical in the implementation.

This attribute, when true, indicates support by the MLD for AP MLD recommendation for ML reconfiguration operations for adding link(s) and deleting link(s) to/from the setup links of a non-AP MLD. If the attribute is false, the MLD does not support AP MLD recommendation for ML reconfiguration operations for adding link(s) and deleting link(s) to/from the setup links of a non-AP MLD "DEFVAL { false }

::= { dot11EHTStationConfigEntry 14 }

**########## End of changes for CID #23019 ##################**

﻿**9.4.2.321.2.3 Common Info field of the Basic Multi-Link element**

**…**

**Table 9-404k—Subfields of the Extended MLD Capabilities And Operations subfield**

|  |  |  |
| --- | --- | --- |
| **Subfield** | **Definition** | **Encoding** |
| Recommended Max Simultaneous Links | Recommended maximum number of enabled links that a non-AP MLD can operate on for simultaneous frame exchanges. | Reserved when carried in a frame that is not a Beacon frame or a broadcast Probe Response frame.Indicates the recommended maximum number of enabled links on which a non-AP MLD can operate on for simultaneous frame exchanges (#23170)for any operating mode of MLO ﻿described in 35.3 (Multi-link operation (MLO). A value of 0 indicates that the AP MLD does not advertise any such limit. The value 1 is reserved.See 35.3.7.1 (General). |

﻿