IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 11bi D1.0 12.16.4 comments | | | | |
| Date: 2025-03-25 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | Email |
| Po-Kai Huang | Intel |  |  | po-kai.huang@intel.com |

Abstract

This submission resolves the following CIDs:

174, 845, 262, 263, 264, 265, 846

Revisions:

* Rev 0: Initial version of the document.

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 TGbi D1.0 Draft. This introduction is not part of the adopted material.

Editing instructions formatted like this are intended to be copied into the TGbi D1.0 Draft. (i.e. they are instructions to the 802.11 editor on how to merge the text with the baseline documents). TGbi Editor: Editing instructions preceded by “TGbi Editor” are instructions to the TGbi editor to modify existing material in the TGbi draft. As a result of adopting the changes, the TGbi editor will execute the instructions rather than copy them to the TGbi Draft.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CID** | **Clause** | **P.L** | **Comment** | **Proposed Change** | **Resolution** |
| 174 | 12.16.4 | 121.12 | Will be useful to define inheritance rules based on the first per-STA profile to reduce overhead. | As in comment | Revised –  Agree in principle with the commenter.  TGbi editor to make the changes shown in the latest version of 11-25/0532 under all headings that include CID 174 |
| 845 | 12.16.4.1 | 121.34 | The text says that the frame should include all elements that "will" be included in a Probe Response frame, which would suggest that a Probe Response frame is going to be sent | Change to "The EDP Capabilities And Operation Parameters Response frame shall include all elements that would be included in a Probe Response frame..." | Revised –  The same change has been adopted as suggested in CID 673. |
| 262 | 12.16.4.2 | 124.19 | Transmission of unsolicited broadcasted EDP capabilities and operation parameters response frames should be clarified in more details for the BPE AP MLDs. | Please add a sentence:" a BPE AP may send unsolicited individually addressed or broadcast addressed EDP Capabilties And Operation Parameters Response frames to signal the BSS parameter values, if a BSS Parameters Change Count of the BPE AP has changed." | Revised –  The current texts focus on the individually addressed case which the AP MLD may send the frame for whatever condition. We clarify that point.  For group addressed, we will need a key to encrypt. Currently, all group addressed management frame are protected by IGTK using BIP. Having only one group addressed management frame encrypted will need more involved design. Given that privacy beacon is encrypted with GTK, suggest to have this as a BPE only feature and encrypted with GTK. Also, do not add extra conditions.  TGbi editor to make the changes shown in the latest version of 11-25/0532 under all headings that include CID 262 |
| 263 | 12.16.4.2 | 124.26 | The content of the Per-STA Profile shall be defined in details. A reference to Probe Response frame is good start, but explicit elements included to the Per-STA Profile is more clear and fits to 802.11 style. | Please specify the content of the Per-STA Profile of the basic variant ML element that is included to the EDP capabilities and operation parameters response frames. | Rejected –  The exact content in the per STA profile is specified through the inclusion of the Capability information field and all elements through the Probe Response contents. This is how 11be specify the contents of per STA profile without duplicate specification when the multi-link element is included in different frames. |
| 264 | 12.16.4.2 | 124.24 | Please enable the EDP capabilities and operation parameters response frame to carry complete set of parameters for a subset of affiliated APs . Parameters signaling for a single affiliated BPE AP may be useful to signal updated BSS parameters only in a single link. | Please allow to signal complete set of parameters for a reduced number of affiliated APs. | Revised –  Agree in principle with the commenter.  TGbi editor to make the changes shown in the latest version of 11-25/0532 under all headings that include CID 264 |
| 265 | 12.16.4.2 | 124.07 | Please enable a STA to request capabilities and operation parameters of another AP MLD. | Please allow protected co-located APs and neighbor APs parameters requests through the associated AP. | Rejected –  It is already possible to get neighboring AP information through neighbor report request/response, which are also protected. Note that it requires additional capability for current AP to get information of neighbor AP. Reusing the existing mechanisms is the simplest solution. |
| 846 | 12.16.4.4 | 122.06 | The text says that the frame should include all elements that "will" be included in a Probe Response frame, which would suggest that a Probe Response frame is going to be sent | Chage text to "All elements that would be included in a Probe Response frame except Multi-Link element..." | Revised –  The same change has been adopted as suggested in CID 673. |

***Discussion:***

***Proposal:***

**TGbi Editor: *Instruction: Modify 12.16.4 as follows***

* Capabilities and operation parameters request and response procedure(#159)

This subclause defines rules to request and respond with capabilities and operation parameters using an EDP Capabilities And Operation Parameters Request frame and an EDP Capabilities And Operation Parameters Response frame.(#844)

* Non-MLO

For non-MLO, a non-AP STA that sets the EDP Capabilities And Operation Parameters Request/Response Support field in the RSNXE to 1 may send an EDP Capabilities And Operation Parameters Request frame without a Basic Multi-Link element to request capabilities and operation parameters from an associated AP that sets the EDP Capabilities And Operation Parameters Request/Response Support field in the RSNXE to 1.

An AP that sets the EDP Capabilities And Operation Parameters Request/Response Support field in the RSNXE to 1 and receives an individually addressed(#262) EDP Capabilities And Operation Parameters Request frame without a Basic Multi-Link element shall respond with an individually addressed(#262) EDP Capabilities And Operation Parameters Response frame without a Basic Multi-Link element.

An AP that sets the EDP Capabilities And Operation Parameters Request/Response Support field in the RSNXE to 1 may transmit an unsolicited individually addressed(#262) EDP Capabilities And Operation Parameters Response frame without a Basic Multi-Link element to an associated non-AP STA that sets the EDP Capabilities And Operation Parameters Request/Response Support field in the RSNXE to 1.

The EDP Capabilities And Operation Parameters Response frame shall include all elements that would be included in a Probe Response frame except the Multi-Link element and the Multiple BSSID element, and the elements shall be in the order defined for a Probe Response frame.(#673, #672, #674)

* MLO

For MLO, all STAs affiliated with an MLD shall set the EDP Capabilities And Operation Parameters Request/Response Support field in the RSNXE to the same value.(#765)

A non-AP STA affiliated with a non-AP MLD that sets the EDP Capabilities And Operation Parameters Request/Response Support field in the RSNXE to 1 may send an EDP Capabilities And Operation Parameters Request frame with a Basic Multi-Link element to request capabilities and operation parameters of APs affiliated with an associated AP MLD if APs affiliated with the associated AP MLD set the EDP Capabilities And Operation Parameters Request/Response Support field in the RSNXE to 1.

If APs affiliated with an AP MLD set the EDP Capabilities And Operation Parameters Request/Response Support field in the RSNXE to 1 and the AP MLD receives through a setup link from an associated non-AP MLD an individually addressed(#262) EDP Capabilities And Operation Parameters Request frame with a Basic Multi-Link element, then the AP MLD shall respond with an individually addressed(#262) EDP Capabilities And Operation Parameters Response frame through an affiliated AP over a setup link to the non-AP MLD.

If APs affiliated with an AP MLD set the EDP Capabilities And Operation Parameters Request/Response Support field in the RSNXE to 1, the AP MLD may send an unsolicited individually addressed(#262) EDP Capabilities And Operation Parameters Response frame to an associated non-AP MLD through a setup link, where non-AP STAs affiliated with the non-AP MLD set the EDP Capabilities And Operation Parameters Request/Response Support field in the RSNXE to 1. If BPE APs affiliated with a BPE AP MLD set the EDP Capabilities And Operation Parameters Request/Response Support field in the RSNXE to 1, a BPE AP affiliated with the BPE AP MLD may send an unsolicited group addressed EDP Capabilities And Operation Parameters Response frame encrypted with the GTK if there exists at least one BPE non-AP STA affiliated with an associated BPE non-AP MLD corresponding to the setup link that sets the EDP Capabilities And Operation Parameters Request/Response Support field in the RSNXE to 1.(#262)

The unsolicited(#264) EDP Capabilities And Operation Parameters Response frame shall include a Basic Multi-Link element, and the Basic Multi-Link element shall include a Per-STA Profile subelement with the Complete Profile subfield set to 1 for each AP affiliated with the AP MLD (see 9.4.2.321.2.4 (Link Info field of the Basic Multi-Link element)). The EDP Capabilities And Operation Parameters Response frame sent in response to an EDP Capabilities And Operation Parameters Request frame shall include a Basic Multi-Link element, and the Basic Multi-Link element shall include a Per-STA Profile subelement with the Complete Profile subfield set to 1 for each requested AP affiliated with the associated AP MLD (see 9.4.2.321.2.4 (Link Info field of the Basic Multi-Link element)). If the Basic Multi-Link element in the EDP Capabilities And Operation Parameters Request frame does not include any per-STA profiles, then all APs affiliated with the associated AP MLD shall be the requested APs. If the Basic Multi-Link element in the EDP Capabilities And Operation Parameters Request frame includes one or more per-STA profiles, then only APs affiliated with the associated AP MLD and whose link ID is equal to the value in the Link ID field in a per-STA profile in the Basic Multi-Link element in the EDP Capabilities And Operation Parameters Request frame shall be the requested APs.(#264) The STA profile field in the Per-STA Profile subelement for each AP affiliated with the AP MLD includes the following in order and does not follow 35.3.3.3 (Advertisement of complete or partial per-link information):

* The Capability Information field as defined in 9.4.1.4 (Capability Information field).
* All elements that are not inherited(#174) and would be included in a Probe Response frame except the Multi-Link element and the Multiple BSSID element, and the elements shall be in the order defined for a Probe Response frame.(#672, #673, #674)

If an element, identified by an Element ID and Element ID Extension (if applicable), is carried in the first per STA profile subelement in the Basic Multi-Link element of the EDP Capabilities And Operation Parameters Response frame and there is no element having the same Element ID and Element ID Extension (if applicable) in a complete profile of a following per STA profile subelement in the same Basic Multi-Link element, then the element is inherited and is considered to be part of the following per STA profile subelement and the value of the element to use in the following per STA profile subelement is the same as that of the corresponding element carried in the first per STA profile subelement unless the following per STA profile subelement carries the Non-Inheritance element (see 9.4.2.239 (Non-Inheritance element)) and the element is listed in the Non-Inheritance element.(#174)