IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 802.11bi – Technical comment resolution to 9.4.1.83 | | | | |
| Date: May 12, 2025 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Antonio de la Oliva | Interdigital Ltd, UC3M |  |  | aoliva@it.uc3m.es |
| Joseph Levy | Interdigital Ltd. |  |  |  |

Abstract

This submission addresses the comments with CID:

26, 31, 33, 34, 35, 199, 203, 204, 205, 206, 291, 308, 309, 326, 331, 332, 426, 429, 431, 432, 436, 438, 441, 444, 446, 448, 449, 450, 751, 772, 853, 855, 998, 1002

**Comment Resolution**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CID** | **Clause Number(C)** | **Page(C)** | **Line(C)** | **Comment** | **Proposed Change** | **Resolution** |
| 26 | 9.4.1.83 | 48 | 27 | "The Epoch Interval Length field contains the length of the EDP epoch, expressed in Epoch Interval Units, shown in Table 9-129g (Epoch Interval Units and epoch durations). Epoch Interval Length value 0 is reserved." The description fopr the Epoch Interval Unit field should be first described. then the Interval and then the Table. | Rewrite Cited text as "The Epoch Interval Unit field value defines the Epoch Interval Unit as shown in Table 9-129g. The Epoch Interval Length field contains the length of the EDP epoch, expressed in Epoch Interval Units. An Epoch Interval Length value 0 is reserved." | REVISED  Editor please implement comments tagged as [430] in document 25/925r0. |
| 31 | 9.4.1.83 | 48 | 57 | "The Minimum Epoch Pacing field signals the minimum epoch duration..." Not sure we use "signals" I think "indicates" is better, or even better, "is". | Edit cited text as follows:" The Minimum Epoch Pacing field signals value indicates the minimum epoch duration... | REVIEWED  Editor please perform the changes tagged with [138] in document with DCN 25/925r0. |
| 33 | 9.4.1.83 | 49 | 6 | "When present.the field signals an indication of the number of affiliated STAs currently participating to this group EDP epoch on the current link." Is the real number or an estimate (i.e., and indication)? I assume the actual number.Also this is repeated at line 22, so at this line, you should simply refer to the Figure 9-207n. | Delete cited text and then add "The Number of Participating Affiliated STAs field format is shown in Figure 9-207n." | ACCEPT |
| 34 | 9.4.1.83 | 49 | 22 | "The Participating Affiliated STAs Count field represents an indication of the number of affiliated STAs participating in the signaled group on the link" Is this the atual number or an indication? I assume it is the actual. Can say it much clearer. | Rewrite cited text as follows:..."The Participating STAs Count field value is the number of affiliated STAs currently participating to this group EDP epoch, on the current link." | REVISE  Editor please perform the changes tagged with [34] in document with DCN 25/925r0. |
| 35 | 9.4.1.83 | 49 | 23 | "The Participating Affiliated STAs Percentage field, with values in the range of 0 to 100, represents an indication of the percentage of the associated affiliated STAs participating to the signalled group on the link." Indication or actual percentage. Can be clearer | Rewrite cited text as follows: "The Participating Affiliated STAs Percentage field value is the percentage of the associated affiliated STAs participating to the signalled group on the link. The Participating Affiliated STAs Percentage field can have a value from 0 to 100, and values 101 to 255 are reserved." | REVISED  Editor please perform the changes tagged with [35] in document with DCN 25/925r0. |
| 199 | 9.4.1.83 | 49 | 10 | Incorrect use of element and unclear sentence | Change to:"The Minimum Epoch Pacing field has the same format as the Epoch Interval field. | ACCEPT  Editor please perform the changes tagged with [106] in document with DCN 25/925r0. |
| 203 | 9.4.1.83 | 49 | 22 | The number of Participating STAs is a privacy violation. A non-AP MLD should select the shortest epoch that it can operate. The number of STAs operating in the epoch information is not needed by the STA. | Please delete the Number of Participating Affiliated STAs field. | DISCUSS |
| 204 | 9.4.1.83 | 49 | 28 | The Participating Affiliated STAs Count is severe privacy violation! In very many cases APs have less than 100 associated STAs , so this field provides the exact number of the STAs. | Please delete the Number of Participating Affiliated STAs field. | DISCUSS |
| 205 | 9.4.1.83 | 49 | 28 | The Participating Affiliated STAs Percentage field is not described or used in the 802.11bi spec. | Please delete the Participating Affiliated STAs Percentage field. | DISCUSS |
| 206 | 9.4.1.83 | 49 | 44 | The field may be transmitted by CPE and BPE devices. CPE is not mentioned in other fields of the clause. | Remove 3\* "CPE" from lines 44-49. | ACCEPT |
| 291 | 9.4.1.83 | 49 | 22 | The number of Participating STAs is a privacy violation. A non-AP MLD should select the shortest epoch that it can operate. The number of STAs operating in the epoch information is not needed by the STA, and the inclusion of such information is a privacy violation. Please delete this field and the relevant spec text. | As in comment. | DISCUSS |
| 308 | 9.4.1.83 | 47 | 44 | The control field for the EDP Epoch Settings element does not follow the order of the fields in the frame. We should reorder it. | I will provide a contribution to solve this | REVISED  Editor please implement changes tagged with [439] in document with DCN 25/925r0 |
| 309 | 9.4.1.83 | 49 | 2 | Imho most of epochs will have an unlimited duration. Maybe we can avoid sending all time a 255 in the Epoch Remaining field and add a control bit stating if it is unlimited. | I will discuss if this is an acceptable solution and will provide a contribution if so. | DISCUSS  Proposal: in responses, when bit is 0 in the control, assume is infinite |
| 326 | 9.4.1.83 | 47 | 35 | field name needs to match Figure- EDP Epoch Settings Control field | Correct field name to EDP Epoch Settings Control field | REVISED  Editor please implement changes tagged as [24] in document 25/925r0. |
| 331 | 9.4.1.83 | 48 | 62 | Missing word? "used by the AP and each non-AP stations member of the EDP group" | Change to "used by the AP and each non-AP station that is a member of the EDP group" | ACCEPT |
| 332 | 9.4.1.83 | 49 | 28 | Clarify sentence: "When transmitted by a CPE AP, the AID Storage Size field indicates the minimum number of AID values required by a CPE non-AP MLD to be allowed to join in the EDP group." | Change to "When transmitted by a CPE AP, the AID Storage Size field indicates the minimum number of AID values a CPE non-AP MLD shall be able to store to be allowed to join in the EDP group." | REVISED  Editor please implement changes tagged as [332] in document with DCN 25/925r0. |
| 426 | 9.4.1.83 | 47 | 34 | "The EDP Epoch Settings field contains the EDP epoch parameters of an EDP epoch sequence for the non- AP MLD." but just above (line 3) we have something else | Delete the cited text | ACCEPT  Editor please implement the changes tagged with [23] in document 25/925r0 |
| 429 | 9.4.1.83 | 48 | 6 | "Each of the bits of the EDP Epoch Settings Control field indicate the presence of the corresponding field in the EDP Epoch Settings field when set to 1 and its absence when set to 0.", yeah, but there's a confusing Epoch Interval field plonked in the middle | Move the Epoch Interval field to the start of the element | REVISED  Editor please implement changes tagged as [429] in document 25/925r0 |
| 431 | 9.4.1.83 | 48 |  | The " Max Epoch Duration  (approx.)" column is at best duplication | Delete said column | DISCUSS |
| 432 | 9.4.1.83 | 48 | 46 | I don't think this is extensible. Existing devices won't understand values 2-7, so it won't be possible to use them in the future | Reduce the Epoch Interval Unit to a 1-bit field | DISCUSS |
| 436 | 9.4.1.83 | 48 | 50 | " the value of the TSF timer of the receiving link" -- it's not clear that a "link", whatever this is exactly, has a TSF timer | Delete "of the receiving link" | DISCUSS |
| 438 | 9.4.1.83 | 48 | 57 | "The Minimum Epoch Pacing field" -- no such field | Maybe this is missing "Parameters" | ACCEPT |
| 441 | 9.4.1.83 | 48 | 63 | It's not clear what "(PlannedTSFStartTime)" is | Delete the cited text | ACCEPT |
| 444 | 9.4.1.83 | 47 | 46 | "Participating Affiliated STAs Percentage Present" -- there is no Participating Affiliated STAs Percentage field | Delete this field | REJECTED  There is such a field, as a subfield of the Number of Participating Affiliated STAs field. |
| 446 | 9.4.1.83 | 49 | 6 | "The Number of Participating Affiliated STAs field is optional" -- yeah, but so are most of the others, and the figure already shows this. Also "of" should be "Of" | Change "The Number of Participating Affiliated STAs field is optional. When present, the field " to "The Number Of Participating Affiliated STAs field ". Maybe for all such fields add ", if present" | REVISED  Editor please include the changes tagged as [446] in document 25/925r0. |
| 448 | 9.4.1.83 |  |  | There is discussion of "current link" or even "the link" but it is not clear what this means | As it says in the comment | DISCUSS |
| 449 | 9.4.1.83 | 49 | 22 | "The Participating Affiliated STAs Count field represents an indication of the number of affiliated STAs par- ticipating in the signaled group on the link." -- if it's just some representation and not the actual number, it's not clear what it carries | Change "represents an indication of" to "indicates". Ditto next sentence | REVISED  Editor please implement changes tagged as [34] in document 25/925r0. |
| 450 | 9.4.1.83 | 49 | 28 | "When transmitted by a CPE AP, the AID Storage Size field indicates the minimum number of AID values required by a CPE non-AP MLD to be allowed to join in the EDP group. When transmitted by a CPE non-AP MLD, the AID Storage Size field indicates the number of AID values that the non-AP MLD can store." -- not clear what contained if transmitted by other devices, e.g. BPE devices | As it says in the comment | REVISED  Editor please implement changes tagged with [206] and [332] in document 25/925r0. |
| 751 | 9.4.1.83 | 49 | 9 | The minimum epoch pacing field only displays the compute constraints of the STA, expressing a minimum value, but the STA may support a short value yet desire another, longer epoch value. The STA should be allowed to express this preference | Introduce an optional field that allows the STA to express its prefered value, and possibly the max value it would accept | DISCUSS |
| 772 | 9.4.1.83 | 49 | 6 | It would be more efficient to signal the number of affiliated STAs which can join the signalled group (2 bytes) instead of having the number of afficilated STAs actually in this group (2 bytes) and the percentage of occupation this group (1 byte) | As in comment, replace "Number of Participating Affiliated STAs" filed with some thing like "Remaining Number of Affiliated STAs Allowed to Participate" and have only a 2 bytes field for this | DISCUSS |
| 853 | 9.4.1.83 | 47 | 50 | The "First Epoch TSF Start time" field is always required for an EDP Epoch. I think the "present" bit is useless. | Please clarify or remove this bit | REJECTED  The EDP element including the EDP Epoch Settings Control field can be used to signal desired Epoch parameters, in this case the First Epoch TSF Start time is not needed. |
| 855 | 9.4.1.83 | 47 | 50 | The "Group ID" field is always required for an EDP Epoch. I think the "present" bit is useless. | Please clarify or remove this bit | REJECTED, there are cases when the STA does not know the Group ID number, for example when creating it. |
| 998 | 9.4.1.83 | 48 | 42 | The start time for epochs is provided in TU (1024 micro seconds), but the Epoch Interval Units available are 1000 seconds and 1 second, which cannot be provided in whole multiples of a TU. | Suggest specifying epoch interval units in TU, and then providing approximate equivalents in inseconds . | DISCUSS |
| 1002 | 9.4.1.83 | 49 | 6 | The non-AP MLD's choice of EDP epoch will apply across all setup links, so the non-AP MLD should have information about participating affiliated STA for all available links. | Update the field to support providing EDP epoch settings for multiple links. | DISCUSS |

**9.4.1.83 EDP Epoch Settings field**

The EDP Epoch Settings field format is shown in Figure 9-207k.[23]

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | EDP Epoch Settings Control | Group ID | Epoch Interval | First Planned [995] Epoch TSF Start Time | Epoch Number Offset | Time Range | Epochs Remaining | Minimum Epoch Pacing [106] |
| Bits: | 16 | 0 or 8 | 16 | 0 or 64 | 0 or 8 | 0 or 16 | 0 or 16 | 0 or 16 |

|  |  |  |
| --- | --- | --- |
|  | Number Of Participating Affiliated STAs | AID Storage Size |
| Bits: | 0 or 8 or 16 or 24 | 0 or 16 |

**Figure 9-207k—EDP Epoch Settings field format**

The EDP Epoch Settings field contains the EDP epoch parameters of an EDP epoch sequence for the non-AP MLD.

The EDP Epoch Settings field [193] Control field format is shown in Figure 9-207l. [24]

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Group ID Present | First  Planned [995] Epoch TSF Start Time  Present | Epoch Number Offset  Present [429] | Time Range  Present  [429] | Epochs Remaining  Present  [429] | Minimum Epoch Pacing [106]Parameters  Present  [429] | Participating Affiliated STAs Count Present | Participating Affiliated STAs Percentage Present | AID Storage Size Present |
| Bits: | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

|  |  |
| --- | --- |
|  | Reserved |
| Bits: | 8 |

**Figure 9-207l—EDP Epoch Settings Control field format**

Each field in the EDP Epoch Settings Control field indicates [195] the presence of the corresponding field in the EDP Epoch Settings field when set to 1 and its absence when set to 0.

[194] contains [425]

The EDP Epoch Interval field format is shown in Figure 9-207m [25]

|  |  |  |  |
| --- | --- | --- | --- |
|  | Epoch Interval Unit | Epoch Interval Length | Reserved |
| Bits: | 3 | 11 | 2 |

**Figure 9-207m—Epoch Interval field format**

The Epoch Interval Unit field indicates the units for the Epoch Interval Length field, and the Epoch Interval Length field contains the length of the EDP epoch, as shown in Table 9-129g (Epoch Interval Units and epoch durations) [430].

Epoch Interval Length field [433] value 0 is reserved.**Table 9-129g—Epoch Interval Units and epoch durations**

|  |  |  |
| --- | --- | --- |
| **Epoch Interval Unit field value** | **Epoch Interval Unit** | **Max Epoch Duration (approx.)** |
| 0 | 1000 s | 23 d 16 h 36 min 40 s |
| 1 | 1 s | 34 min 7 s |
| 2-7 | Reserved | N/A |

The First Planned [995] Epoch TSF Start Time field [328] contains the first Epoch start time presented as the TSF of the link in which this field was sent, see 10.71.2.4 (EDP Epoch Start Time Computation). [196]

The Epoch number offset field value contains the offset between the AP MLD [1001] epoch number and the non-AP MLD [1001] epoch number (see 10.71.2.4 (EDP Epoch Start Time Computation)).

[439] The Time Range field contains the range of values, expressed in epoch interval units [430] as defined in Table 9-129g (Epoch Interval Units and epoch durations), used by the AP MLD [1001] and each non-AP MLDs [1001] that is a [331] member of the EDP group to determine a random delay added to the EDP epoch planned start time. [441]

[439] The Epochs Remaining field value indicates the number of EDP epochs [442] left in the sequence after the current epoch finishes [202], except value of 255 indicates that the epoch sequence duration is unlimited.[32]

The Minimum Epoch Pacing Parameters [438] field indicates the minimum epoch duration the non-AP MLD can support.[198] The format of the Minimum Epoch Pacing field [106] is the same as the Epoch Interval field.

[446]The Number of Participating Affiliated STAs field format is shown in Figure 9-207n. [33]

|  |  |  |
| --- | --- | --- |
|  | Participating Affiliated STAs Count | Participating Affiliated STAs Percentage |
| Octets: | 2 | 1 |

**Figure 9-207n—Number of Participating Affiliated STAs field format**

The Participating STAs Count field value is the number of affiliated non-AP MLDs currently participating to this group EDP epoch, on the current link. [34]

.

The Participating Affiliated STAs Percentage field value is the percentage of the associated affiliated non-AP MLDs participating to the signalled group on the link. The Participating Affiliated STAs Percentage field can have a value from 0 to 100, and values 101 to 255 are reserved. [35]

When transmitted by a [206] AP MLD [1001], the AID Storage Size field indicates the minimum number of AID values a non-AP MLD shall be able to store to be allowed to join in the EDP group.[332]

When transmitted by a [206] non-AP MLD, the AID Storage Size field indicates the number of AID values that the non-AP MLD can store.