IEEE P802.11
Wireless LANs

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| P802.11bi Comment Resolution for some CIDs in 10.71.2.5 |
| Date: 2024-07-15 |
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Abstract

This document provides resolution to comments for following CIDs:

1030, 1095, 1096, 1116, 1117, 1174, 1175, 1347, 1348, 1349,

1351, 1352, 1353, 1354, 1355, 1356, 1357, 1358, 1505

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: Fix author
* Rev.2: Reduce redundancy
* Rev.3: Address comments from first presentation

# Comments

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| **CID** | **Commenter** | **Clause** | **P.L** | **Comment** | **Proposed Change** | **Resolution** |
| 1030 | Chaoming Luo | 10.71.2.5 | 57.33 | Inconsistent terms distributed in clause 9 and clause 10: Group EDP epoch, EDP epoch. Are they the same thing? | Use consistent term. | Revised:As per 3.2, these are different in scope (general term and per-group):An EDP epoch is “A time window during which a set of EDP parametersremain constant."Instead,[group EDP epoch] A time window in which each non-accesspoint (non-AP) multi-link device (MLD) of a set of non-AP MLDs applies a set of EDP parameters that isvalid for the duration of that group EDP epoch.Covered the case where “EDP epoch” was used without specification.Please implement changes labeled with #1030 |
| 1095 | Julien Sevin | 10.71.2.5 | 57.28 | "The next epoch boundary occurs at a Next Epoch Start Time defined in the EDP Epoch Setting field of the Group Enhanced Privacy element of the (Re)Association Response frame or the EDP epoch setting action response frame." The Next Epoch Start Time is not the the value of theEDP Epoch Setting field of the Group Enhanced Privacy element, it is derived from it | Please indicate that the Next Epoch Start Time is derived from the value of theEDP Epoch Setting field of the Group Enhanced Privacy element. | Revised -Please implement changes labeled with #1095 |
| 1096 | Julien Sevin | 10.71.2.5 | 57.33 | What are EDP "Group members" ? | Please clarify what are "Group members". | Revised -Removed the sentence with reference to group members and added a clarification to the next sentence:A CPE non-AP MLD belonging to an EDP group and CPE AP MLD may calculate the anonymized OTA values before the group EDP epoch (#1030) during which they are to be used.Please implement changes labeled with #1096 |
| 1116 | stephane baron | 10.71.2.5 | 57.27 | make this part consistent with chapter 9,4,2,337. Add areference to chapter 9.4.2.337 for the EDP Epoch start time computation, or move the computation here. | as in comment | Revised -Moved the computation from 9.4.2.337 to 10.71.2.X (added) and added a reference in the previous textPlease implement changes labeled with #1116 |
| 1117 | stephane baron | 10.71.2.5 | 57.35 | please indicate here in which case the anonymized OTA values may be computed before the start of the Epoch | add a note :"note : If a frame will not to be sent before the start of the next EDP Epoch, the station can compute new anonymized OTA values before the EDP epochduring which they are to be used" | Reject -The specification does not provide recommendations.  |
| 1174 | Patrice Nezou | 10.71.2.5 | 57.29 | " The Epoch Interval Duration field of the same fields and frames defines the interval of the following Group EDP epochs sequence." Which fields and frames are about ? | Please clarify | Revised -The field referred here is the EDP Epoch Settings field. Please implement changes labeled with #1174 |
| 1175 | Patrice Nezou | 10.71.2.5 | 57.39 | "At the start of the new EDP epoch, the new anonymization parameters are used to anonymize the selectedOTA fields of all transmitted individually addressed frames." I think that it is not "all" but "all new transmitted individually adressed frames ". Or it can be said: "except the retransmitted individually addressed frames". | As in comment | RevisedPlease implement changes labelled with #1175. |
| 1347 | Mark RISON | 10.71.2.5 | 57.25 | "their EDP OTA fields of individually addressed frames" should be "the EDP..." | As it says in the comment | Revised -Removed the sentence, redundant because of following sentence “ A CPE non-AP MLD belonging to an EDP group and CPE AP MLD may calculate the new OTA values to be used by the non-AP MLD in the next group EDP epoch” Please implement changes labelled with #1347. |
| 1348 | Mark RISON | 10.71.2.5 | 57.25 | "anonymize their EDP OTA fields of individually addressed frames at the beginning of each new epoch" -- how can this be done? In general, you don't know at the start of a time period about all the frames you will transmit during that time period | As it says in the comment | Revised - As previous comment (1347)Please implement changes labelled with #1348. |
| 1349 | Mark RISON | 10.71.2.5 | 57.16 | " a Next Epoch Start Time" shoul dbe lowercase | As it says in the comment | RevisedPlease implement changes labelled with #1349. |
| 1351 | Mark RISON | 10.71.2.5 | 57.29 | "The Epoch Interval Duration field of the same fields" -- I have no idea what this could possibly mean | As it says in the comment | RevisedPlease implement changes labelled with #1351. |
| 1352 | Mark RISON | 10.71.2.5 | 57.30 | " the interval of the following Group EDP epochs sequence" -- not sure what this means | Maybe " the interval of the following group EDP epoch sequences"? Is there such a thing as a group EDP epoch? How does it differ from other kinds of EDP epochs? | Revised:As per 3.2, these are different in scope (general term and per-group):An EDP epoch is “A time window during which a set of EDP parametersremain constant."Instead,[group EDP epoch] A time window in which each non-accesspoint (non-AP) multi-link device (MLD) of a set of non-AP MLDs applies a set of EDP parameters that isvalid for the duration of that group EDP epoch.Adapted the text as suggested. Please implement changes labelled with #1352. |
| 1353 | Mark RISON | 10.71.2.5 | 57.32 | "Each EDP epoch has associated EDP Group members." -- what's the point of this sentence? And Group should be lowercase | As it says in the comment | Revised -Sentence has been removed. Please implement changes labelled with #1353 |
| 1354 | Mark RISON | 10.71.2.5 | 57.35 | "A CPE non-AP MLD and CPE AP MLD may calculate the anonymized OTA values before the EDP epoch during which they are to be used. " -- I don't think that's true in general. E.g. you can't in general predict all the SNs you'll transmit during the time interval | As it says in the comment | Revised.Please implement changes labelled with #1354. |
| 1355 | Mark RISON | 10.71.2.5 | 57.39 | "At the start of the new EDP epoch, the new anonymization parameters are used to anonymize the selected OTA fields of all transmitted individually addressed frames. " should be "... of all indiv frames transmitted during the epoch" | As it says in the comment | RevisedPlease implement changes labelled with #1355 |
| 1356 | Mark RISON | 10.71.2.5 | 57.45 | "start of new epoch" missing article | As it says in the comment | RevisedPlease implement changes labelled with #1356. |
| 1357 | Mark RISON | 10.71.2.5 | 57.47 | "clause 10.71.2.1" should be "Subclause ..." | As it says in the comment | RevisedPlease implement changes labelled with #1357. |
| 1358 | Mark RISON | 10.71.2.5 | 57.50 | "The MAC Header parameters" -- what are parameters of the MAC header? Also header should be lowercase | As it says in the comment | Revised.Please implement changes labelled with #1358. |
| 1505 | Mark RISON | 10.71.2.5 | 57.42 | "To account for clock drifts, the CPE non-AP MLD and CPE AP MLD shall begin to accept individually addressed frames that use the new anonymization parameters for a dot11EpochStartTimeMargin before the start of new epoch." -- the MIB attribute might be set to different values on each side; can't this cause problems? Ditto "The CPE non-AP MLD and CPE AP MLD shall accept individually addressed frames with the old anonymization parameters for dot11EpochTransitionTime after the start of the new epoch." | As it says in the comment | Revised -Please implement changes labeled with #1505 |

The baseline for this text is 802.11 REVme D6.0, and 802.11 TGbi draft D0.4

***TGbi editor: Modify clause 10.71.2.5 as follow***

* Epoch boundaries(#604r11)

 (#1347, #1348)The next epoch boundary is derived (as described in 10.71.2.X) from the value of the next epoch start time (#1349) (#1095) (#1116) defined in the EDP Epoch Setting field of the Group Enhanced Privacy element of the (Re)Association Response frame or the EDP epoch setting action response frame. The Epoch Interval Duration field of the EDP epoch settings field (#1174, #1351)defines the interval of the following group EDP epoch sequence (#1352).

 (#1096, #1353)A CPE non-AP MLD belonging to an EDP group(#1096) and the CPE AP MLD may calculate the new OTA values to be used for the non-AP MLD in the next (#1354) group EDP epoch (#1030).. At the start of the new group EDP epoch (#1030), the new anonymization parameters are used to anonymize the selected OTA fields of all new (#1175) individual frames transmitted during the epoch (#1355).

To account for clock drifts, the CPE non-AP MLD and the CPE AP MLD shall accept individually addressed frames with the old anonymization parameters for dot11EpochTransitionTime after the start of the new epoch (#1356, #1505). The CPE non-AP MLD and the CPE AP MLD shall accept individually addressed frames with the old anonymization parameters for dot11EpochTransitionTime after the start of the new epoch. The rules of subclause (#1357) 10.71.2.1 (Introduction) apply for frame retransmissions and acknowledgments.

The OTA values (#1358) of the individually addressed frames are obtained(#1358) as defined in 10.71.3 (Establishing frame anonymization parameter sets), 10.71.4 (MAC Header anonymization and transmitting functions) and 10.71.5 (MAC header anonymization and receiving functions).

**10.71.2.X EDP Epoch start time (#1116)**

At any point of time, for the current EDP Epoch of iteration number n in the sequence, the start time GETn+1 of the next EDP Epoch of the sequence, is computed according to the formula:

GETn+1 = GTn+1 + ΔIT

ΔIT = PRF-128\64(PGTK, "ERCM", GTn+1) mod (RandTR)

With:

GTn+1 =GTn+ GEI

Or

n = ⌊(TSF - GT0) / GEI⌋

GTn+1 =GT0+ (n+1) x GEI

and where:

 n is the current iteration of the EDP Epoch sequence.

 GT is the reference start time of the EDP Epoch.

 GEI is the value indicated in the Epoch Interval Duration of the EDP Epoch Settings

 field

 TSF is the current value of the internal TSF counter of the receiving link.

 PRF-Length is the pseudorandom function defined in 12.7.1.2

 GT0 is the value indicated in the Next Epoch Start Time field of EDP Epoch Settings

 field

 RandTR is the value indicated in the Time Range field of the EDP Epoch Settings field

PGTK (for Privacy GTK) is the cryptographic key assigned by an EDP AP MLD that is used to manage the group EDP Epoch, distributed to the EDP non-AP MLDs associated with the EDP AP MLD.

The generation and the distribution of the PGTK is TBD.

If the effective start time GET of an EDP Epoch occurs during an ongoing TXOP, the Epoch starts at the end of this TXOP.