IEEE P802.11  
Wireless LANs

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| TGbi ad-hoc teleconference Minutes 07th - 10th July 2025 | | | | |
| Date: 2025-07-20 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Stéphane Baron | Canon | Cesson-Sévigné, France |  | [Stephane.baron](mailto:Stephane.baron)@crf.canon.fr |

Abstract

This document contains the minutes for the IEEE 802.11bi task group ad-hoc meetings that took place in between July 07th 2025 and July 10th 2025.

Note: Highlighted text are action items.

Q – proceeds a question

A - proceeds an answer

C - proceeds a comment

Yellow highlight - action point

**Monday July 07th 2024, 08:00 EST.**

**Chair: Carol Ansley, Cox Communications**

**Secretary: Stéphane Baron**

**Vice-chairs: Jerome Henry, Cisco; Antonio DeLaOlivaDelgado, InterDigital, Inc**

**Technical editor: Po-Kai Huang, Intel**

Chair calls meeting to order at 10:03 ET.

Agenda slide deck: [11-25-1104r1](https://mentor.ieee.org/802.11/dcn/25/11-25-1104-01-00bi-tgbi-july-ad-hoc-agenda.pptx):

1. Reminder to do attendance
2. The chair mentioned the call for essential patents

No answers.

1. Review of policies and procedures.

IEEE individual process slides were presented.

1. The chair covered the IEEE copyright policy and participation rules.

No Questions

1. **Discussion of agenda 11-25-1104r1 (slide #14)**
   1. Discussion on agenda

People added their documents to be presented this week in the presentation queue.

* 1. Adoption of agenda by unanimous consent (12 people in the call).

1. **Administrative**

TGbi ad hoc/upcoming teleconferences– email to be added to the submission queue

There will be a need for a secretary on July 23th.

Current comment count – Po-Kai

Tech editor presented the current status of the Cid resolution and go thru all remaining Cid to indicate status of resolution and readiness of the comment resolution documents.

1. **Technical contributions**
   1. [11-25/0535r3](https://mentor.ieee.org/802.11/dcn/25/11-25-0535-03-00bi-12-16-7-comments.docx) – 12.16.7 comments - Po-Kai Huang

Document presented by the author

Two remaining CIDs in this document: CID967, CID 269,

* + 1. Discussion:

No discussion

Author ask for a SP on the two CIDs.

**SP#1 :**

Agree with the resolutions in document 25/535r3 for comments 967 and 269.

Chair ask if there is any discussion **on SP#1**

No discussion

Chair ask if anybody wants to register disagreement for this resolution

No answer

**SP#1** received unanimous agreement.

* 1. [11-25/0532r6](https://mentor.ieee.org/802.11/dcn/25/11-25-0532-06-00bi-12-16-4-comments.docx) – 12.16.4 comments - Po-Kai Huang

Document presented by the author

About inheritance for the vendor specific element

* + 1. Discussion:

C: I think this make lots of sense to make vendor specific out of inheritance.

Q: We cannot inherit the multi-link element, right?

A: right.

Q: Can we split the bloc into two separated paragraphs to make reading easier ?

A: ok. We can split on the “except”

Author create revision r6 and ask for a SP on this revision

**SP#2:**

Agree with the resolution in document 25/532r6 for comment 174.

Chair ask if there is any discussion on **SP#2**

No discussion

Chair ask if anybody wants to register disagreement with this SP#2

No answer

**SP#2** received unanimous agreement.

* 1. [11-25/0951r3](https://mentor.ieee.org/802.11/dcn/25/11-25-0951-03-00bi-d1-0-cids-in-clause-10-71-1.docx) – D1.0 CIDs in clause 10.71.1- Philip Hawkes

Document presented by author

Propose some text to describe presence monitoring

* + 1. Discussion:

65, 66, 67, 322, 336, 376, 511, 513, 924, 925, 926, 938**,** 958, 959, 989, 1025, 1027, 1028, 1029, 1030, 1039

CID65:

Need more discussion with commenter to

Q: Do you have a privacy threat clear now you removed the presence monitoring definition?

A: This is explained in 4.5.4.10a today

Q: Can we just say was FA does without indicating why it does it?

A: OK, we can indicate that the STA periodically “randomizes” stuff.

Additional editorial upgrade to the FA definition.

Q: first bullet talks about encrypted association and their parameters, right?

A: Here we explain issues, not how we solve it.

Q: Do we need to indicate encrypted association here?

A: I think this can be useful but this is not in the scope of this submission right now.

Q: I don’t think that long term is the only problem. Do we need any of these?

A: In the past when the group initiate the TG, we indicate we just want to make thing more difficult for eavesdropper to track people thanks to their devices.

C: I like this introductory part. Example for the car can introduce the BPE is OK for me.

C: 802.11 device are now personal and only few shared devices exit on the field.

Q: Does this cover CID 65?

A: yes, but I am happy to remove it from the list.

Q: Can we also keep CID938?

A: CID938 resolution touches large part of this document, not only the definitions.

Q: On last page, the 2nd and Third bullets seem very similar, what is the difference?

A: OK, we can remove the third bullet.

Q; Do you xant to show difference between active deices and passive devices here.

A: No. I want to differentiate between having same stations connected to the same MLD or not.

C: I think FA contribute to make things more difficult to perform traffic analysis.

A: I can add that FA does not always mitigate against traffic analysis.

Author ask if anyone needs time.

Chair indicate this would be useful to upload latest revision and let people think on it.

* 1. [11-25/1077r0](https://mentor.ieee.org/802.11/dcn/25/11-25-1077-00-00bi-presence-monitoring-and-fa.pptx) – Presence monitoring and FA- Graham Smith

Document presented by the Author

* + 1. Discussion:

C: I see the point; you just have to reassociate to anonymize. But you then lose your transmission. This is one main difference to me.

C: At the beginning we add a requirement document and scenario documents, explaining the reason why 11bi is needed.

C: fingerprinting is also a big difference between randomized MAC in 11bh and the work in 11bi.

C: regarding the need for an annex, I do not have strong opinion against. It is probably a lot of work.

A: This is mainly to explain to people how to setup Epoch parameters.

C: You can reassociate whenever you want when doing nothing.

A: In any case you may lose something coming from the AP while dissociated.

C: regarding the epoch constraints, 11bi is very flexible. The AP can indicate an epoch interval but a station can request different value.

C: I have no problem to give examples coming from people who care about 1hour or 1second duration.

C: One important point is that MAC address is not the only way to identify a station. Fingerprinting and traffic analysis are also possible and changing AMC addresses while associated makes more difficult to apply those technics.

C: Having 10 people in the room, do not change anything to change MAC address if there are still in the room.

C: Your example is limited possibility to kick users out of the BSS, right, so you assume only the stations can change their MAC address. Do you focus on CPE features only?

A: Not all CPE, encrypting beacons and association frames are good, I a am discussing on FA.

Q: So, your main issue is: “why changing the station MAC address is needed when associated?”, right?

A: I think if you really want to hide you can just reassociate, why do we need complicated implementation of the FA?

C: Reassociation is requiring to break the communication. If you reassociate, you will lose the quality of service of the stream.

C: It is not possible to reassociate every second without creating nightmare for AP and bad user experience.

A: OK, but why do we need to change every 1s ?

No more questions

* 1. [11-25/1100r2](https://mentor.ieee.org/802.11/dcn/25/11-25-1100-02-00bi-d1-0-cids-fa-mechanisms-summary-and-mib.docx) – D1.0 CIDs FA mechanisms summary and MIB– Philip Hawkes

Document presented by the author

Main stuff is to add an MIB for frame anonymization

* + 1. Discussion:

Q: about MAC header anonymization, some elements are not in the header but in the frame body, so frame anonymization is broader than just the header

A: OK, we can realign the definition.

CID225 is tabled to wait for commenter to be present in the next meeting.

Q: Do you mean that all CPE FA features are included in BPE FA?

A: Yes. BPE FA is build on top of CPE FA.

Q: Do we really want to allow only non-AP station supporting BPE to associate to BPE AP, I think this make those devices

A: I think this is the case, CPE stations cannot support AP MAC address changes, so cannot stay associated to the AP.

Q: regarding the MIB dot11FAfeatures\_enabled. Is it written by an external entity?

A: I am glad to remove that part.

Q: Is enablement for those features or is it capability?

A: This is activated, so this is the current instance. The current instantiation is capable of doing. Is the station capable or not is another question?

C: you have to be more specific on the type of entry you want to put.

C: when do this take effects, the spec can say that the next time you join you can change it.

C: When you associate this variable should not be changed. This is what “activated” means.

A: OK, it seems there are some things we need to check around those MIB variables.

Discussion stopped due to lack of time.

1. **AoB**

No other business

1. Chair recess the meeting at 12:15 EDT

**Attendance**

                Timestamp                       Name                                     Affiliation  
Breakout                                                                                              
TGbi (ad-hoc)  07/07/2025              Smith, Graham                                    SRT Wireless  
TGbi (ad-hoc)  07/07/2025            McCann, Stephen                    Huawei Technologies Co., Ltd  
TGbi (ad-hoc)  07/07/2025                 Yee, Peter                                         NSA-CSD  
TGbi (ad-hoc)  07/07/2025              Sevin, Julien                    Canon Research Centre France  
TGbi (ad-hoc)  07/07/2025                 Ho, Duncan                      Qualcomm Technologies, Inc  
TGbi (ad-hoc)  07/07/2025             Nezou, Patrice                    Canon Research Centre France  
TGbi (ad-hoc)  07/07/2025            baron, stephane                    Canon Research Centre France  
TGbi (ad-hoc)  07/07/2025              Ansley, Carol                         Cox Communications Inc.  
TGbi (ad-hoc)  07/07/2025         Patwardhan, Gaurav                      Hewlett Packard Enterprise  
TGbi (ad-hoc)  07/07/2025  DeLaOlivaDelgado, Antonio                              InterDigital, Inc.  
TGbi (ad-hoc)  07/07/2025              Smith, Luther  Cable Television Laboratories Inc. (CableLabs)  
TGbi (ad-hoc)  07/07/2025              Huang, Po-Kai                               Intel Corporation  
TGbi (ad-hoc)  07/07/2025                  Zhou, Lei               New H3C Technologies Co., Limited  
TGbi (ad-hoc)  07/07/2025             Hawkes, Philip                           Qualcomm Incorporated

**Wednesday July 08th 2025, 10:00 EST.**

**Chair: Carol Ansley, Cox Communications**

**Secretary: Stéphane Baron**

**Vice-chairs: Jerome Henry, Cisco; Antonio DeLaOlivaDelgado, InterDigital, Inc**

**Technical editor: Po-Kai Huang, Intel**

Chair calls meeting to order at 10:02 ET.

Agenda slide deck: [11-25-1104r2](https://mentor.ieee.org/802.11/dcn/25/11-25-1104-02-00bi-tgbi-july-ad-hoc-agenda.pptx):

1. Reminder to do attendance
2. The chair mentioned the call for essential patents

No answers.

1. Review of policies and procedures.

IEEE individual process slides were presented.

1. The chair covered the IEEE copyright policy and participation rules.

No Questions

1. **Discussion of agenda 11-25-1104r2 (slide #16)**
   1. Discussion on agenda

New documents added to the queue:

Doc 1114r0, 1107r0, 1110r0, and 1111r0

Update of revision numbers of some presentation already in the queue

* 1. Adoption of agenda by unanimous consent (13 participants online).

1. **Administrative**

Jerome Henry as Co-Chair will step over chairing role at the end of the meeting.

Tech editor indicate that it would be fine to straw poll on Thursday the documents discussed but not SP yet.

1. **Technical contributions**
   1. [11-25/1078r2](https://mentor.ieee.org/802.11/dcn/25/11-25-0477-04-00bi-resolution-of-a-few-comments-on-clause-9.docx) – CR for editorial CIDs related to PGTK– Julien Sevin

Document presented by the author.

This document is editorial CIDs.

* + 1. Discussion:

CID 463:

Q: in different place you use different wording for the “PGTK switch time indication” can you uniformized?

A: OK I will do the change in the document.

CID367:

C: “set to 1 by” is used to set the value, in that case we should say “is 1 for both”.

A: OK.

Document modified accordingly

CID990:

C: you mention group EDP epoch enabled, right? Better say “with group EDP Epoch enabled”

A: OK.

C: I don’t think using enabled in the definition.

A: I am fine to remove this mention from the defining, just saying “using EDP Group”.

C: There are several instances of “set to” in the document that need to be modified also.

A: (tech editor): Maybe we should solve this for the whole amendment and we should assign this text to one people (to you?) to solve all that at once.

C: We will fix that before publishing the draft D2.0.

Author will come back with a fixed version regarding CID 463 and come back latter for the SP

* 1. [11-25/1079r0](https://mentor.ieee.org/802.11/dcn/25/11-25-0955-00-00bi-comment-resolution-for-cids-888-942-974.docx) – CR for technical CIDs related to PGTK– Julien Sevin

Document presented by the author.

Document related to the PGTK technical comments.

* + 1. Discussion:

CDI 260:

Q: Is there a note or something that indicate the station has to store the MAC address before going to sleep?

A: I don’t think we should store info and AP may change the parameters during sleep.

A: OK, I agree with your solution.

C: Here you also mention the PGTK switch time indication, so you need to do same modification as in previous document.

A: OK, I will check the document.

Author create a r1 according to the received comment and ask for a SP on this r1 revision

**SP#1:**

Agree with the comment resolutions in 25/1079r1 for comments 185, 260, 396, 397, 643, 645, 657, 660, 661, 733, 1008.

Chair ask if there is any question or comment about the **SP#1:**

No answer

Chair ask if anybody want to register any disagreement for this **SP#1**:

No answer

SP#1 is considered as receiving no disagreement.

* 1. [11-24/1029r1](https://mentor.ieee.org/802.11/dcn/25/11-25-1029-01-00bi-comment-resolution-on-bpe-group-keys.docx) –Comment resolution on BPE group keys– Jarkko Kneckt

Document presented by the author.

Document contains CID resolution to the group key management for BPE

* + 1. Discussion:

CID896

C: the GTK is not used to encrypt the management frames so I am surprised you propose to use same key to encrypt data and privacy beacon.

A: IGTK doesn’t provide encryption for the group management frame. So we could introduce a new key only for the group management frames?

A: This is the usual wait to do to guaranty security key separation. This is why we introduced the BIGTK.

A: The BIGTK is used for multi-BSS while IGTK is BSS related. So, I think in that case we can use a simpler approach.

C: Currently we clearly separate beacon and management frame.

C: I understand this is more complex to handle 2 keys but this is not the recommended practice to do that here.

C: In baseline we have different IGTK but this is mainly to deal with retro compatibility. So here I think this is fine to use same key as long as we don’t use the same nonce.

Author will create an r2 based on the received comments and will come back latter to request a SP on r2

* 1. [11-25/1099r0](https://mentor.ieee.org/802.11/dcn/25/11-25-1099-00-00bi-faster-associations-text.docx) – faster association – Jarkko Knecht

Document presented by the author.

Presentation discussing about protected association.

* + 1. Discussion:

Q: regarding the slide 5: you is the router returning the MAC address, why doing that?

A: The router returns the MAC address associated to the old IP to check this is still assigned to the same MAC.

C: The router removes the MAC address from th list pretty quickly.

A: I think this can remain quite a long time.

Q: Shouldn’t we focus on IPV6?

A: right, IPV4 is requested by implementation people eager to continue using IPV4

C: For IPV6 you need to check

Q: Why do you consider that the station wants to keep their IP address, this goes against privacy protection from browser tracking for instance.

A: this speedup the process

Q; Can those mechanisms be disabled?

A: Yes, both IP address and block ack setup can be disabled.

C: this is not really privacy specific but rather linked to general association. And I think we are in latter stage and we will have to address comments on this point. Isn’t it more for TGbn?

A: I believe we have the IP address setup for association already defined for the FILS setup. The point here is to get best benefit of the encrypted association by shortening the setup process that is highly desirable for implementation people.

C: existing features are fine but you are adding stuff that will generate new comments. In addition, we do not address privacy issue with that. Optimization are always desirable but we need to kept our scope to maintain our timeline. Can it be done in 11bn roaming procedure for instance.

A: In 11bn roaming we are not doing association so this not possible to handle it outside in the association steps. IP address is not changed while roaming. So, I believe 11bi is the correct group to handle this.

A; When you roam the IP domain is not mandated to be the same and you may have to setup IP address again. So, I think this is totally relate to 11bn roaming.

C: All the arguments in favor of your proposal are performance oriented, not privacy oriented.

A: Here we improve the FILS association frame by encrypting association so FILS get privacy enhancement. So why not using this enhancement to make it more efficient for every amendment.

C: Totally agree with previous comments. I think we need to focus on finishing 11bi, as opposed to expending it to cover optimization that is not even related to privacy.

C: Also agree that I have concerns about increasing the TGbi scope.

Q: The question is around the use cases. For FILS we have short term association so we need shortened the association time. In TGbi we do not have such concerns, and usually the network provides the IP address.

A: yes, CPE and BPE are targeting long term association, but the encrypted association is usable to any type of association. Enhancing protected association make TGbi association more desirable.

C: Here we are tying the device with an IP address. I also think that the overhead needed for the AP and station to remember IP and test if the IP address is used or not, etc.

A: regarding the separation between layers 2 and 3, we already have the ARP stuff and her we propose to continue on this direction.

C: You mention that is can be beneficial for station in PS mode or wants to associate and de-associate quickly. It sounds awkward for an AP to see station popping up like that after being silent for hours. I see advantage for stations but seems to require more effort on AP side to make it work.

C: I think we should first look at what the application will be first, to be sure that we AP vendor support to follow that road.

Chairing role is now taken by Jerome as co-chair.

Q: this concept is supposed to be applied to same AP or during reassociation to another AP?

A: belonging to the same IP network.

Q: If we apply it to BPE, how to you know the AP belongs to the same BSS.

A: You will have to associate first to get the parameters.

C: Technically I don’t’ see a problem.

C: this stage 11bi we need to focus and finish it and there is no privacy issue so I don’t see we can go in TGbi.

C: regarding the roaming, there is no reassociation so, I wonder the what is the benefits of this proposal in that case.

C: It seems your proposal goes in another direction than TGbn that require no reassociation during roaming.

A: AP and STA often have different view on the fact that a sta is associated or not.

Author ask to go thru the 1099r0 that is proposing text giving more details to finely understand the proposal.

For sake of time, preference is given to the Comment resolution doc 1099r0 will be presented later.

* 1. [11-25/0995r2](https://mentor.ieee.org/802.11/dcn/25/11-25-0995-02-00bi-technical-comments-edp-settings-field-with-discussion.docx) – Technical comments EDP Settings field with discussion– Antonio De La Oliva

Document presented by the author.

Second presentation of the document after initial comments received.

* + 1. Discussion:

CID34, and CID 434 are presented again to get question.

Q: There is only two units left, so why having fewer reserved values?

A: Nobody can extend it for retro compatibility issue, this is why I reduced that

C: I recommend having more bits to allow extension, to make thing less difficult to modify in the future. I prefer to have 2 or 3 bits in the units. But I can live with this single bit.

C: I don’t want to change it and have more comments later, so let use one more byte and have more reserved bits.

After discussion consensus is found to have 8 bits reserved and go back to previous number of bits for units bits, and 16bits for duration field.

Document modified accordingly and revision 3 is created.

Author ask for a SP on this revision 3 later

* 1. [11-25/1114r2](https://mentor.ieee.org/802.11/dcn/25/11-25-1114-02-00bi-comment-resolution-clause-10-71-2-1-part-i.docx) – Comment resolution Clause 10.71.2.1 Part I – Antonio De La Oliva

Document presented by the author.

Resolution of CIDs related to 10.71.2.1 clause.

* + 1. Discussion:

CID1040:

C: I agree that we need to keep the sentence mentioning that CPA and BPE are optional.

A: this part is part of FA and EDP operational are required to allow FA to work.

C: Doing FA, you need to do everything except BPE.

A: Can we indicate that Epoch operation are mandatory for FA but not otherwise.

C: Then in that case this si not linked to CPE but to FA that is also used in BPE.

CID1040 is deferred to allow offline discussion

CID 228

C: If we start indicating values for EDP setup we should also think of other values, like margin, transition period duration etc. Maybe an annex creation as propose by previous commenter is the good way to go.

CID232

C: If a STA is looking for this information it can request it an obtain the information

C: Splitting in multiple EDP group makes privacy better.

CID 339

Editorial enhancements.

CID 344 transfer to another resolver.

CID802

C: All FA features are assuming the non-AP MLD is associated. Maybe we should add it to 10.71.1.

A: For sake of comment resolution let’s keep it like that for today and make a clearer introduction in the future.

1. **Straw polls**

People delaying their SP during this session to allow creation of new revision with small modification presented their SP.

SP#3: Agree with the comment resolutions in 995r3 for comments 34, 35, 203, 204, 205, 291, 431, 432, 436, 448, 449, 751, 772, 998, 1002

Chair ask if anybody objects?

No answer

SP#3 received unanimous support

**SP#4:**

Agree with the comment resolutions in 1078r3 for comments 17, 186, 39, 320, 367, 368, 398, 462, 463, 464, 489, 490, 642, 646, 654, 656, 658, 659, 662, 663, 767, 990

Chair ask if anybody does not support the direction of this **SP#4**

No objection

**SP#4 received unanimous support**

SP#5:

Agree with the comment resolutions in 1008r3 for comments 982, 9, 146, 781, 983, 780, 879, 769, 782, 148, 783, 976, 149, 321, 372, 920, 911, 985, 373, 374, 770, 785, 921, 299, 151, 375, 158, 786, 923, 987, 323, 184, 300, 988, 183, 386, 301, 152, 986

Chair ask ifanybody does not support the direction of this SP#5

No answer

**SP#5 received unanimous support**

Since there is 10 minutes remaining doc presentation continues.

* 1. [11-25/1111r0](https://mentor.ieee.org/802.11/dcn/25/11-25-1111-00-00bi-clauses10-71-5-5-6-5-fixes.docx) – Clauses10.71.5.5\_6.5\_fixes– Jerome Henry

Document presented by the author.

* + 1. Discussion:

**CID 588:**

C: I think you probably have to find a better naming to avoid the confusion.

C: can it be OTA\_TS?

Author will come back with a better naming tomorrow.

1. **AoB**

No other business

1. Chair recessed the meeting at 12:26 EDT

**Attendance**

                Timestamp                       Name                                     Affiliation  
Breakout                                                                                              
TGbi (ad-hoc)  08/07/2025             Kneckt, Jarkko                                      Apple Inc.  
TGbi (ad-hoc)  08/07/2025           Ficara, Domenico                             Cisco Systems, Inc.  
TGbi (ad-hoc)  08/07/2025               Levy, Joseph                              InterDigital, Inc.  
TGbi (ad-hoc)  08/07/2025                 Ho, Duncan                      Qualcomm Technologies, Inc  
TGbi (ad-hoc)  08/07/2025             Nezou, Patrice                    Canon Research Centre France  
TGbi (ad-hoc)  08/07/2025                 Yee, Peter                                         NSA-CSD  
TGbi (ad-hoc)  08/07/2025                  Zhou, Lei               New H3C Technologies Co., Limited  
TGbi (ad-hoc)  08/07/2025              Henry, Jerome                             Cisco Systems, Inc.  
TGbi (ad-hoc)  08/07/2025             Hawkes, Philip                           Qualcomm Incorporated  
TGbi (ad-hoc)  08/07/2025            baron, stephane                    Canon Research Centre France  
TGbi (ad-hoc)  08/07/2025              Sevin, Julien                    Canon Research Centre France  
TGbi (ad-hoc)  08/07/2025         Patwardhan, Gaurav                      Hewlett Packard Enterprise  
TGbi (ad-hoc)  08/07/2025              Ansley, Carol                         Cox Communications Inc.  
TGbi (ad-hoc)  08/07/2025  DeLaOlivaDelgado, Antonio                              InterDigital, Inc.  
TGbi (ad-hoc)  08/07/2025              Smith, Graham                                    SRT Wireless

**Wednesday July 09th 2025, 10:00 EST.**

**Chair: Carol Ansley, Cox Communications**

**Secretary: Stéphane Baron**

**Vice-chairs: Jerome Henry, Cisco; Antonio DeLaOlivaDelgado, InterDigital, Inc**

**Technical editor: Po-Kai Huang, Intel**

Chair calls meeting to order at 10:02 ET.

Agenda slide deck: [11-25-1104r3](https://mentor.ieee.org/802.11/dcn/25/11-25-1104-03-00bi-tgbi-july-ad-hoc-agenda.pptx):

1. Reminder to do attendance
2. The chair mentioned the call for essential patents

No answers.

1. Review of policies and procedures.

IEEE individual process slides were presented.

1. The chair covered the IEEE copyright policy and participation rules.

No Questions

1. **Discussion of agenda 11-25-1104r3 (slide #16)**
   1. Discussion on agenda

Doc 1119r0 added

Several document revision updates signaled.

* 1. Adoption of agenda by unanimous consent (13 participants online).

1. **Administrative**

Tech editor shows the latest Comment resolution status.

1. **Technical contributions**
   1. [11-25/1111r](https://mentor.ieee.org/802.11/dcn/25/11-25-1111-02-00bi-clauses10-71-5-5-6-5-fixes.docx)2 – Clauses10.71.5.5\_6.5\_fixes – Jerome Henry

Document presented by the author.

Mainly about a new name for OTSF: OTA\_Timestamp

* + 1. Discussion:

Q: Are we hyphen it or underscore it?

A: This is underscore.

Author create r3 and request a SP on revision 3

**SP#1:**

Agree with the comment resolutions in doc 25/1111r3 for comments 588, 593 and 253.

Discussion on **SP#1**

No discussion

Chair ask if anybody want to register any disagreement for this **SP#1**:

No answer

SP#1 is considered as receiving no disagreement.

* 1. [11-25/1103r2](https://mentor.ieee.org/802.11/dcn/25/11-25-1103-02-00bi-d1-0-cids-in-clauses-10-71-3.docx) – D1.0 CIDs in clauses 10.71.3 – Phil Hawkes

Document presented by the author.

* + 1. Discussion:

Q: Cid 564 and 567 you indicate open?

A: I ma still struggling to understand the comment. I hope we can solve it there.

Regarding CID 223:

Q: Do you want to rename the BPE block accordingly to the naming of the CPE HMA block?

A: Yes, I think this is handled by another document.

Q: Since we refer to the table to extract data, do we need the text?

A: probably not for all the parameters.

Document modified accordingly to only list the referenced tables.

Other editorial enhancement applied to the document.

Q: Can we mention “when an MLD is assigned to an EDP Group”, then the MLD do the computation.

A: Agree.

For sake of time, author will come back after offline discussion on the wording.

C: (tech editor): Do not use (#ED), indicate the CID number instead.

A: OK.

CID 564:

C: The comment is a about the remaining bits, but the cited sentence is deleted.

C: A separated document deals with the comment (25/1118).

CID 567 resolution is moved to another document (25/1118)

C: Please correct the format of the document, the header is not correct.

A: OK, will do that.

Author will create the corresponding revision r3 and come back tomorrow.

* 1. [11-25/1118r1](https://mentor.ieee.org/802.11/dcn/25/11-25-1118-01-00bi-d1-0-cids-in-clauses-10-71-5-and-10-71-6-except-sn-de-anonymization.docx) – D1.0 CIDs in clauses 10.71.5 and 10.71.6 except SN (de)anonymization – Phil Hawkes

Document presented by the author.

* + 1. Discussion:

Q: On this first CID resolution, what is the large text?

A: This a sort of commentary to introduce the change

C: You can move all this text in a discussion section and keep comment resolution simple to give instruction to the editor.

CID579

C: I think things can be much more clear since the Epoch number offset is just a parameter received during EDP Group assignment that is used to initialize internal EDP epoch number of the non sequence for the non AP sta.

C: Let’s discuss offline to find a better wording.

A: OK.

Q: Is optionally required here?

A: Yes, it is here.

Q: does it mean that for BPE all non-AP generate the same parameters sets and in addition generate the CPE parameters?

A: Yes.

C: I think this is worse explicitly mentioning that BPE means that both CPE and BPE requirements apply

A: Agree.

Q: Is Timestamp a MAC header parameter?

A: No, it isn’t

C: So, we should move it out of the MAC header part.

C: In fact, Timestamp is in MAC header of Privacy beacon.

A: OK, so we need to be clear about which beacon we are talking about.

C: It is better to use cpe(1) or bpe(2) in the titles of the clauses also.

Q: For BPE does all the group use the same PN for broadcast frames.

A: Good point, we should have a per link one.

Q: Do we need this “recovered” PN value, because in the following we are using PN value?

A:

Other editorial modification applied to the document.

Author will come back with rev1 later.

* 1. [11-25/1119r0](https://mentor.ieee.org/802.11/dcn/25/11-25-1119-00-00bi-d1-0-sn-de-anonymization.docx) – D1.0 SN (de)anonymization – Phil Hawkes

Document presented by the author.

* + 1. Discussion:

Q: SNS 1 applies for non-AP CPE? What would be such frames?

A: SNS1 seems to be for link specific management frames. SNS 1 is handled in a different way in BPE.

C: You can reorganize this part as a bulleted list with an introduction. Currently you have a bulleted list without introduction.

A: OK, I see.

C: Group addressed frame transmitted on CPE are using SNS1 and cannot be obfuscated. Otherwise, you lost legacies.

* 1. [11-25/1029r2](https://mentor.ieee.org/802.11/dcn/25/11-25-1029-02-00bi-comment-resolution-on-bpe-group-keys.docx)– Comment resolution on BPE group keys – Jarkko Knecht

Document presented by the author.

Second presentation after previous presentation taking into account some received comments.

* + 1. Discussion:

Q: The terms configure, program, and install are used. Just wondering do they mean different things?

A: This is only used once in the REV. This is not the usual way.

A: I see some instances in the baseline, but the difference is not clear. This may be a question for the REV.

Since no modification are done to the text, author request a SP on rev 3

**SP#2**:

Agree with the comment resolutions included in 25/1029r2 resolving comments: 220, 258, 292, 632, 763, 774, 892, 896, 907 and 910.

Discussion on **SP#2**

No discussion

Chair ask if anybody want to register any disagreement for this **SP#2**:

No answer

SP#2 is accepted with unanimous agreement.

* 1. [11-25/1099r0](https://mentor.ieee.org/802.11/dcn/25/11-25-1099-00-00bi-faster-associations-text.docx) – Faster associations Text– Jarkko Kneckt

Document presented by the author.

* + 1. Discussion:

C: Same comment as yesterday. I think that there is no link to the privacy, so is not in the scope of 11bi.

C: I think this type of contribution is using time normally dedicated to comment resolution. I recommend to de-prioritize this contribution.

A: I believe this is linked to the protected association.

Chair: I agree we should clear the path for CR before going further.

Author then decides to have offline discussion if people have technical comment, not procedural ones.

* 1. [11-25/1114r4](https://mentor.ieee.org/802.11/dcn/25/11-25-1114-04-00bi-comment-resolution-clause-10-71-2-1-part-i.docx) – 10.71.2.1 Part I– Antonio De La Oliva

Document presented by the author.

2nd presentation after removal of unhandled CIDs from the list.

* + 1. Discussion:

No discussion

Author then request a SP on rev4

**SP#3:**

Agree with the comment resolutions included in 25/1114r4 resolving comments: 799, 68, 337, 955, 69, 70, 71, 72, 73, 107, 227, 228, 229, 230, 232, 338, 339, 342, 520, 523, 524, 530, 533, 534, 758, 800, 801, 802, 862, 863, 864, 866, 867.

Discussion on **SP#3**

No discussion

Chair ask if anybody want to register any disagreement for this **SP#3**:

No answer

SP#3 is accepted with unanimous agreement.

* 1. [11-25/1123r0](https://mentor.ieee.org/802.11/dcn/25/11-25-1123-00-00bi-cid-757.pptx) – CID 757 – Antonio De La Oliva

Document presented by the author.

Resolve CID 757

* + 1. Discussion:

C: Originally this group information is in an encrypted frame because we do not want to provide to third party. The proposal defeat that.

C: The RNR and NR are in clear and do not tell anything about the beacon emitter.

A: We want the STA to take the right decision while trying to associate.

C: Then you have to give exact values that will disclose information.

Q: Do we need this mechanism, since the sta can enter a group after association?

A: We want to speed up the association process by avoiding a STA to dissociate and reassociate to another BSS.

C: I recommend rejecting the Comment

C: I think we do not have any EDP info in the CPE beacon.

C: I understand but this is supper complicated.

C: I think we can disclose the minimum epoch pacing information is fine but not the exact default Epoch interval, that is a leak of vital information.

C: Even minimum pacing is a starting point for the attacker.

C: I think that is seems strange that a STA will select the roaming AP based on the default epoch interval value.

Author will have offline discussion about it.

1. **AoB**

No other business

1. Chair recessed the meeting at 12:15 EDT

**Attendance**

            Timestamp                Name                        Affiliation  
Breakout                                                                     
TGbi (ad-hoc)  09/07/2025              Sevin, Julien                    Canon Research Centre France  
TGbi (ad-hoc)  09/07/2025            McCann, Stephen                    Huawei Technologies Co., Ltd  
TGbi (ad-hoc)  09/07/2025              Ansley, Carol                         Cox Communications Inc.  
TGbi (ad-hoc)  09/07/2025           Ficara, Domenico                             Cisco Systems, Inc.  
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TGbi (ad-hoc)  09/07/2025                 Yee, Peter                                         NSA-CSD  
TGbi (ad-hoc)  09/07/2025             Hawkes, Philip                           Qualcomm Incorporated  
TGbi (ad-hoc)  09/07/2025  DeLaOlivaDelgado, Antonio                              InterDigital, Inc.  
TGbi (ad-hoc)  09/07/2025             Nezou, Patrice                    Canon Research Centre France  
TGbi (ad-hoc)  09/07/2025              Huang, Po-Kai                               Intel Corporation  
TGbi (ad-hoc)  09/07/2025            baron, stephane                    Canon Research Centre France  
TGbi (ad-hoc)  09/07/2025                  Zhou, Lei               New H3C Technologies Co., Limited  
TGbi (ad-hoc)  09/07/2025              Smith, Graham                                    SRT Wireless

**Wednesday July 10th 2025, 10:00 EST.**

**Chair: Carol Ansley, Cox Communications**

**Secretary: Stéphane Baron**

**Vice-chairs: Jerome Henry, Cisco; Antonio DeLaOlivaDelgado, InterDigital, Inc**

**Technical editor: Po-Kai Huang, Intel**

Chair calls meeting to order at 10:02 ET.

Agenda slide deck: [11-25-1104r4](https://mentor.ieee.org/802.11/dcn/25/11-25-1104-04-00bi-tgbi-july-ad-hoc-agenda.pptx):

1. Reminder to do attendance
2. The chair mentioned the call for essential patents

No answers.

1. Review of policies and procedures.

IEEE individual process slides were presented.

1. The chair covered the IEEE copyright policy and participation rules.

No Questions

1. **Discussion of agenda 11-25-1104r4 (slide #16)**
   1. Discussion on agenda

Doc 1003r0 uploaded but to be presented later.

* 1. Adoption of agenda by unanimous consent (14 participants online).

1. **Administrative**

Tech editor made a status on the comment resolution. 90 comments to be presented during the next telecon.

So, globally seems CR can be done after next F2F meeting.

1. **Technical contributions**
   1. [11-25/1116r0](https://mentor.ieee.org/802.11/dcn/25/11-25-1116-00-00bi-misc-comment-resolution-lb288.docx) – Misc. Comment Resolution - LB288 – Carol Ansley

Document presented by the author.

* + 1. Discussion:

CID876:

Q: Can we just add that in our case we can also indicate the AID while associate.

A: I want to remove the behavior stuff from here because this is already wrong. For mesh for instance

C: Mesh has no AP.

C: It seems we are not using the AID16 but rather AID 12.

C: We do not use AID element, so don’t touch it.

C: Regarding AID field, this is a list of 12 bits, so this is not the same as AID16 so we do not touch the AID field either. So, the description is OK. We have the AID16 during assoc and then provide AID list of AID12 values.

A: OK, I will have a look again and withdrawn the comment is modification are unnecessary.

CID902:

C: A detail discussion with 802.11 chairman shows that this is possible to change the name, and 802.11 chairman can help us. I am ok, the main thing is to decide if we want to change, and which change.

Q: Can we replace Data by Device to keep EDP acronyms?

A: Let’s discuss that.

C: We just need to change the name not the PAR.

Q: I wonder if can only change the title and not the PAR.

C: I think device is not the right term neither. So, in that case rather use Enhanced Station Privacy.

C: Trying to keep EDP is a lost cause anyway.

C: I think we are more protecting the network privacy. So not focus on a single device.

C: EPP seems a better name to cover our work.

Chair indicate that F2F in Madrid would probably be good place to change the name and would require a motion from the group.

C: I think that if we change the title, we may need to revies some other parts of the PAR. So, I think we need to do a full PAR review, to be sure to propose a change to the working group.

Q: What could be consequences of a change of the PAR? This is voted by the 802.11 group, right? So, I wonder if this can have an impact on our work and may delay the draft D2.0.

A: Intention is to change the title only.

C: I agree to bring it to 802.11 chair and limit the discussion for 20 minutes to avoid deriving too much.

Q: Do we have a way to constrain the discussion to the title only and avoid going to requirement and 802.11bi scope?

A: Well, I don’t know. But .bi chairman will indicate the direction.

C: I think we just need to be clear that the change of title does not violate the current PAR.

C: The impact will be for the process handling. This process can be done in December this year but do not block our current work.

Author stop presentation and register task to be performed in Tuesday’s meeting to discuss with 802.11 chairman.

* 1. [11-25/1121r0](https://mentor.ieee.org/802.11/dcn/25/11-25-1121-00-00bi-comment-resolution-254-255.docx) – Comment Resolution 254,255 – Domenico Ficara

Document presented by the author.

* + 1. Discussion:

No discussion

Author then requires a SP for those 2 CIDs

**SP#1**:

Agree with the comment resolutions in 25/1121r0 for comments 254 and 255.

Discussion on **SP#1**

No discussion

Chair ask if anybody want to register any disagreement for this **SP#1**:

No answer

**SP#1** accepted with unanimous agreement.

* 1. [11-24/1003r1](https://mentor.ieee.org/802.11/dcn/25/11-25-1003-01-00bi-edpke-comments.docx) – EDPKE comments– Duncan Ho

Document presented by the author.

* + 1. Discussion:

CI168:

C: EDPKE has now a dedicated bullet.

CI170:

Q: Do we share the group key with the PASN?

A: During the PASN the KDK is used, but we should say that PTK – KEK it is derived during EDPKE

Additional editorial enhancements provided online.

CID293

C: Link setup only happen after association . Here we should say “TA field of the first Authentication frame” and later “to the second”

CID731:

Q: Can we put any reference to the HMAC\_HASH computation instead of rejecting the comment.

A: I will check.

C: In the baseline we mention “HMAC\_Hash”, so you can revise the CID by going lower case.

A: OK.

Chair ask if author is ready for a sp.

Author created revision r2 and ask for a SP on this r2 revision

**SP#2**:

Agree with the comment resolutions in 25/1003r2 for comments: 890, 168, 170, 171, 172, 179, 180, 293, 294, 295, 296, 413, 414, 720, 725, 727, 729, 730, 731, 732, 916, 142, 721.

Discussion on **SP#2**

No discussion

Chair ask if anybody want to register any disagreement for this **SP#2**:

No answer

**SP#2** accepted with unanimous agreement.

Chair indicates she will have to leave at 11:00 EST, po-kai will ensure chair role until end of the meeting.

* 1. [11-25/1107r0](https://mentor.ieee.org/802.11/dcn/25/11-25-1107-00-00bi-clause10-71-4-fixes.docx) – Clause10.71.4\_fixes– Jerome Henry

Document presented by the author.

* + 1. Discussion:

CID518

Q: The way to indicate except is bit is a little strange. Can we say global/ local bits are not anonymize mean that the whole address is not anonymized?

Q: can we say that the 46 last bits are anonymized

Discussion stopped there . The author will create an r1 and come back.

* 1. [11-24/1110r0](https://mentor.ieee.org/802.11/dcn/25/11-25-1110-01-00bi-clause-10-71-8-fixes.docx) – Clause\_10.71.8\_fixes – Jerome Henry

Document presented by the author.

* + 1. Discussion:

CID612:

Q: Can we italicize a name the first time we name something?

A: I don’t know if there are already such a thing in the baseline. If we do it there; we should have do it in any other case in the draft.

C: The point is to only do that after “called …” the first time.

C: There is some reason to call this group BPE group, even if there is only 1 EDP group in BPE.

C: I don’t like this approach. BPE group is used only 3 times. BPE group is just a type of EDP group. We should be clear that we are dealing with a specific EDP group instead. So, we don’t need a name for this thing. Just use EDP group instead.

Q: Aside of the comment. You mention “BPE group has a single schedule”, but EDP group has one schedule, we should remove this part.

A: If we redraft the sentence, we will remove that.

CID105

Q: What did we say about mobile AP in the requirements? Can you postpone this CID?

A: agree, but the requirement document do not mention “mobile” term, so we shouldn’t limit BPE to mobile AP.

A: OK, so I am ok with the resolution then

Cid 259

Q: Here I don’t see how GTK protect the integrity? Using the key to encrypt is the action that corresponds to the shall.

A: Should we just say that “the AP shall use GTK to encrypt the payload”.

Q: Can you move the “to improve privacy, and to protect” at the beginning of the paragraph.

A: OK.

Author will address the received comments and will come back with another revision later.

* 1. [11-25/1092r0](https://mentor.ieee.org/802.11/dcn/25/11-25-1092-01-00bi-cr-for-miscellaneous-cids.docx) – CR for Miscellaneous CIDs– Po-Kai Huang

Document presented by the author.

* + 1. Discussion:

CID946: discussion on “DS MAC address” definition

Q: DS MAC concept in our spec worries me. DS uses a MAC address on it side, however our concept go further that. They may be other implementations, due to the DS being vaguely defined.

A: The 2 only places in the spec about DS are very vague.

Commenter will have a look to the definition and discuss during the next F2F meeting

CI182

C: I think we should keep it simple and only consider the passive case and not the active attack issue.

A: OK, I can then revise the text. I do not plan to run a SP now.

C: I think I like the simple resolution, but I do not see what is protecting privacy and what is not, so I need more time to review this.

A: Sure, let’s discuss offline.

Going back to document 1107r1 for a SP

* 1. [11-25/1107r1](https://mentor.ieee.org/802.11/dcn/25/11-25-1107-01-00bi-clause10-71-4-fixes.docx) – Clause10.71.4\_fixes– Jerome Henry

Document presented by the author.

Requesting a SP after creation of this new revision r1

* + 1. Discussion:

No discussion

SP#3:

Agree with the comment resolutions in 1107r1 for comments: 569, 154, 575, 572, 576, 577, 578

Discussion on **SP#3**

No discussion

Chair ask if anybody want to register any disagreement for this **SP#3**:

No answer

**SP#3** accepted with unanimous agreement.

* 1. [11-25/1124r0](https://mentor.ieee.org/802.11/dcn/25/11-25-1124-00-00bi-d1-0-cid-948.docx) – D1.0 CID 948– Phil Hawkes

Document presented by the author.

Single CID 948 rejected

* + 1. Discussion:

Q: Usually we use MSDU, and defining a new cipher suite is difficult. I agree the comment is not that clear. Probably just explaining what we do is enough.

C: Usually this kind of comment requires a contribution from the commenter. We can also reject saying there is not enough detail to resolve the comment.

C: I agree, there is insufficient detailed in the proposed change.

C: If at the end then yes, we say "insufficient detail". But at this stage we could ask the commenter if he intends to submit something.

C: It will sound like we invite the commenter to bring more material do be discussed during the Madrid meeting. This is probably not what we want, and the comment is 2-month-old without contribution. If the commenter wants it, it can come back at next round.

Resolution is modified accordingly.

Author creates revision 1 and then request to SP this document.

SP#4:

Agree with the comment resolution in 1124r1 for comment 948

Discussion on **SP#4**

No discussion

Chair ask if anybody want to register any disagreement for this **SP#4**:

No answer

**SP#4** accepted with unanimous agreement.

1. **AoB**

Chair reminds that we still have 2 remaining conf call before the next F2F

1. Chair adjourn the meeting at 11:57 EDT

**Attendance**

            Timestamp                Name                        Affiliation  
Breakout                                                                     
TGbi (ad-hoc)  10/07/2025               Levy, Joseph                              InterDigital, Inc.  
TGbi (ad-hoc)  10/07/2025              Ansley, Carol                         Cox Communications Inc.  
TGbi (ad-hoc)  10/07/2025                 Yee, Peter                                         NSA-CSD  
TGbi (ad-hoc)  10/07/2025              Sevin, Julien                    Canon Research Centre France  
TGbi (ad-hoc)  10/07/2025           Ficara, Domenico                             Cisco Systems, Inc.  
TGbi (ad-hoc)  10/07/2025              Henry, Jerome                             Cisco Systems, Inc.  
TGbi (ad-hoc)  10/07/2025              Bahn, Christy                                      IEEE STAFF  
TGbi (ad-hoc)  10/07/2025            baron, stephane                    Canon Research Centre France  
TGbi (ad-hoc)  10/07/2025              Smith, Graham                                    SRT Wireless  
TGbi (ad-hoc)  10/07/2025             Hawkes, Philip                           Qualcomm Incorporated  
TGbi (ad-hoc)  10/07/2025                 Ho, Duncan                      Qualcomm Technologies, Inc  
TGbi (ad-hoc)  10/07/2025             Nezou, Patrice                    Canon Research Centre France