IEEE P802.11  
Wireless LANs

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| Minutes for REVmf 2025 May Interim - Warsaw | | | | |
| Date: 2025-05-28 | | | | |
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Abstract

Minutes for the 802.11mf (REVmf) for the meetings held during the 2025 May IEEE 802 Wireless Interim – Warsaw Presidential Hotel – Warsaw, Poland May 11-16, 2025.

1. **2025 May IEEE 802 Wireless Interim –Warsaw– 802.11mf (REVmf) Monday, May 12, 2025 - PM2**
   1. **Called to order 4:02 am** ET by the WG Chair, Mike Montemurro.
   2. **Introduction of officers:**
      1. Mike Montemurro (Huawei), Chair
      2. Mark Hamilton (Ruckus/CommScope), Vice Chair
      3. Mark RISON (Samsung), Vice Chair
      4. Po-Kai Huang (Intel), Editor
      5. Jon Rosdahl (Qualcomm), Secretary
   3. **Review Patent, Copyright and Participation policies**
      1. No items noted.
   4. **Review Agenda – 802-11-25/0590r1**
      1. <https://mentor.ieee.org/802.11/dcn/25/11-25-0590-01-000m-revmf-agenda-may-2025-session.pptx>
      2. Monday March 12, 4pm CEST
2. Chair’s Welcome, Policy & patent reminder
3. Approve agenda
4. Publication status for IEEE 802.11-2024, 802.11bh-2024, and 802.11be-2024
5. Contributions
   1. Remove Clause 9 behavior requirements – doc 11-24/1735 – Joseph Levy (InterDigital)
   2. EHT MLO – doc 11-25/332 – Rubayet SHAFIN (Samsung)
   3. Max channel switch time harmonization – 11-25/269 – Brian HART (Cisco)
   4. P2P TWT harmonization - doc 11-25/255 – Brian Hart (Cisco)
6. Recess
   * 1. Move Motions for Minutes to Thursday.
     2. Youhan will not present doc listed.
     3. NEISHABOORI wants to present on Thursday.
     4. Bring Brian HART’s 11-25/255 up to Monday.
     5. No Objection to updated Agenda shown in R2.
   1. **Publication status for IEEE 802.11-2024, 802.11bh-2024, and 802.11be-2024** – Po-Kai HUANG, Intel
      1. 802.11-2024 has been published.
      2. 802.11bh is under review
      3. 802.11be is under review
      4. Editors want to incorporate the two under review prior to update
      5. Discussion on initial Letter Ballot – Goal for this week to get material, but need to have the roll-ups included, so we need to allow Editors time to prepare for roll-up.
      6. We will hold off on motions for changes to 11be until we get the first draft ready.
      7. No changes to the 11be affected clauses will be considered this week.
   2. **Review doc 11-24/1735** – Remove Clause 9 behavior requirements –Joe LEVY (InterDigital)
      1. Document: <https://mentor.ieee.org/802.11/dcn/25/11-25-0332-01-000m-eht-mlo.docx>
      2. Deferred
   3. **Review Doc 11-25/332r1** – EHT MLO – Rubayet SHAFIN (Samsung)
      1. <https://mentor.ieee.org/802.11/dcn/25/11-25-0332-01-000m-eht-mlo.docx>
      2. Review Submission
      3. The Title of the submission and the file name does not match. The title of the file is not what is wanted. Rubayet will get a new DCN and resubmit this submission under a new name and number when he brings it back.
      4. Discussion on Link Replacement field usage.
      5. Suggestion to take to a different TG... i.e. TGbn.
      6. Discussion on if link replacement time (2 octets) is that sufficient.
      7. Discussion on changes to TWT link and background usage.
      8. Discussion on replacement schedules being a bit different duration.
      9. Discussion on how useful the mechanism will be in future.
      10. Discussion on alternatives to this proposal.
      11. Discussion on how the reschedule can be useful send traffic to another AP.
   4. **Review Doc 11-25/269r1 - Max channel switch time harmonization**– Brian HART (Cisco)
      1. <https://mentor.ieee.org/802.11/dcn/25/11-25-0269-01-000m-max-channel-switch-time-harmonization.docx>
      2. Review Submission
      3. Highlight changes that were made for CSA.
      4. Note adding a broadcast unsolicited Probe Response frame.
      5. Timestamps are included.
      6. Need to change the STA to non-AP STA.
      7. Discussion on protected beacon frame, but time stamp field is not protected, and the Shall should be changed to “should”.
      8. Discussion on how this would be used in the field, and how this helps real world cases.
      9. Identification of several Typos.
      10. Discussion on when the need to make a channel switch.
      11. Discussion on to know the time on the new channel.
      12. Request to only define fields in one place.
      13. Storm of spurious frames discussed.
      14. Discussion on use of “min()” function in the middle of text.
      15. “Switch Time elapses” what is meant?
      16. Beacons have timestamps, so no need to call it out.
      17. Discussion on the use of “will not” – change to “does not’ or some other proper replacement.
      18. MIB Attribute needs false case.
      19. MIB Attribute has “ActivatedActtivated – should only have one.
      20. Change "equal to false" -> "not equal to true"
      21. After remove timestamp from preamble need to change to an actual field name.
      22. There is a submission on protecting the TSF in doc 802-11-25/1919.
      23. Will make more updates and bring back later if time this week.
   5. **Review doc 11-25/255 – P2P TWT harmonization** - Brian Hart (Cisco)
      1. <https://mentor.ieee.org/802.11/dcn/25/11-25-0255-03-000m-p2p-twt-harmonization.docx>
      2. Review submission
      3. Review the changes that seem similar to TGbn.
         1. Need to harmonize the potential changes being made.
      4. Discussion on when awake purpose is to transmit or receive.
      5. Discussion on why remove the “fully powered”—restore but at the end of added sentence.
      6. ECDA function change should be in ECDA section not here.
      7. Discussion on “Receives and transmits frames”. Don’t add statement that seems to overstate the existing rules.
      8. More feedback will be given offline.
      9. Check the Revision
   6. Recess until Wednesday.
7. **2025 May IEEE 802W Interim – Warsaw - TGmf (REVmf) Wednesday May 14 PM2**
   1. **Called to order** 4:02 am ET by the WG Chair, Mike Montemurro.
   2. **Introduction of officers**:
      1. Mike Montemurro (Huawei), Chair
      2. Mark Hamilton (Ruckus/CommScope), Vice Chair
      3. Mark RISON (Samsung), Vice Chair
      4. Po-Kai Huang (Intel), Editor
      5. Jon Rosdahl (Qualcomm), Secretary
   3. **Review Patent, Copyright and Participation policies**
      1. No items noted.
   4. **Review Agenda – 802-11-25/0590r2**
      1. <https://mentor.ieee.org/802.11/dcn/25/11-25-0590-02-000m-revmf-agenda-may-2025-session.pptx>
      2. Wednesday May 14, 4pm CET
8. Agenda Approval
9. Contributions
   1. Additional channel in EU – doc 11-25/337 – Halasz (Morse Micro)
   2. Protecting Beacon TSF – doc 11-25/1919 – Halasz/Ptasinski (Morse Micro)
   3. SA Query improvements – doc 11-25/1915 – Halasz/Ptasinski (Morse Micro)
   4. Frag attack A-MSDU - Doc 11-25/948 – Vanhoef
   5. PASN ID for MLO – doc 11-25/345 – Li (ZTE)
   6. Dynamic fragmentation MLO – doc 11-25/373 – Patil (Qualcomm)
   7. 6 GHz Discovery – doc 11-25/371 – Patil (Qualcomm)
10. Recess
    * 1. Review Agenda, no objections or changes.
    1. **Review doc 11-25/337 –Additional channel in EU** – Halasz (Morse Micro)
       1. <https://mentor.ieee.org/802.11/dcn/25/11-25-0337-02-000m-additional-2-mhz-channel-in-eu.docx>
       2. Review Submission
       3. Discussion on Existing Products in Europe.
       4. This change will be a backward compatible issue, but only with Morse Micro Devices known at this time.
       5. Plan to launch letter ballot out of this week, request that this be added as a comment to the LB and we can discuss/resolve in July.
    2. **Review doc 11-25/1919 – Protecting Beacon TSF** – Halasz/Ptasinski (Morse Micro)
       1. <https://mentor.ieee.org/802.11/dcn/24/11-24-1919-04-000m-protecting-tsf-values-in-beacon-frames.docx>
       2. Review submission
       3. Abstract:
          1. The Timestamp field in 802.11 Beacon frames are currently unprotected, even when the frames are protected using BIP. This submission proposes changes to add protection for the Timestamp field in BIP-protected frames, in a manner that is transparent to legacy devices.
       4. Discussion on the overhead cost to make the change.
       5. Not thought to be significant. - 2.6.5. Not thought to be significant. - disagreement about how much there is (zero, or relatively small), and the disagreement will be sorted out off-line.
       6. More discussion needed on this submission.
       7. Check wording on “When dot11Protectedtimestamp is false” – Change to “not true”
       8. Check on “handshake to one” change to “handshake to 1”
       9. Check on Equation 12-4 vs 12-5 reference.
       10. Check on “when adding protection”…concern with the wording in concert with dot11ProtectedTimestamp is true: ".. one choice is changing to “true, the BIPN for beacon protection shall be calculated.."
       11. Replace first “when” with “if”
       12. Check “protected timestamp fields” for proper wording.
           1. "supporting Protected Timestamp capability" would match the RSNXE bit
       13. The MIB Variable is not in the right format, need more offline work.
    3. **Review doc 11-25/1915 – SA Query improvements** –Halasz/Ptasinski (Morse Micro)
       1. <https://mentor.ieee.org/802.11/dcn/24/11-24-1915-05-000m-sa-query-improvements-for-low-transmit-devices.docx>
       2. Review submission.
       3. Discussion on some clean up that needs to be done.
       4. Will schedule for Telecon after July Session.
    4. **Review doc 11-25/948 – Frag attack A-MSDU –** Mathy Vanhoef (KU Leuven)
       1. <https://mentor.ieee.org/802.11/dcn/25/11-25-0948-00-000m-a-msdu-mesh-spoof-protection.pptx>
       2. Review Submission.
       3. Proposed changes are contained in 802-11-25/949
          1. <https://mentor.ieee.org/802.11/dcn/25/11-25-0949-00-000m-a-msdu-mesh-spoof-protection.docx>
       4. Review the proposed Change.
       5. Discussion on the level of concern of the proposed change.
       6. The Plan would be to add a comment in the LB and then address on a telecon after July.
       7. Discussion on what happens if “M=3”.
          1. See page 3 –
       8. Discussion on processing of A-MSDU.
       9. Value 3 is reserved and not valid for any use currently.
       10. The Chair will take an action item to submit a comment on Mathy behalf to get this topic inserted into discussion after July.
    5. **Adjust agenda** to drop Abhi’s presentations that were already presented and bring Po-Kai’s forward and others from Thursday’s Agenda.
    6. **Review Doc 11-25/0748r0** – AKM for PASN - Po-Kai HUANG (Intel)
       1. <https://mentor.ieee.org/802.11/dcn/25/11-25-0748-00-000m-ft-akm-for-pasn.docx>
       2. Review Submission.
       3. Discussion on Topic 1:
          1. Discussion on PASN Authentication with
          2. Discussion on pair-wise key usage. – existing text, so may need to review and comment in letter ballot.
          3. Discussion on the text may not have the correct draft text.
          4. Change the Otherwise to a separate “if” sentence.
       4. Discussion on Topic 2:
          1. Discussion on ANonce or SNonce values and if they are present.
          2. Is there an FTE in P3? Not clearly worded to indicate that there is.
          3. There is concern on breaking existing implementations.
          4. There is not a keyholder ID included in PASN and this may be broken.
          5. Note text in 12.13.3.2 PASN frame construction and processing does not mention "FTE" anywhere
          6. Discussion on missing items to fully define the missing text.
          7. 12.13.6 seems to be clear that FTE is only within Wrapped Data element; and only in PASN auth 1 and 2 (not 3). SNonce shall be se to a random value in PASN auth 1 based on baseline.
       5. Discussion on Topic 3:
          1. The Baseline while not liked, it may be complete.
          2. Discussion on if PASN needed to change to add something to the table.
          3. "an AKM suite selector value for which the Authentication type column indicates FT authentication" (referencing Table 9-190).. i.e., this is what baseline uses for "FT AKMP"
    7. **Review Doc 11-25/0894r2** – EBCS Certificate ID - Hitoshi MORIOKA (SRC Software)
       1. <https://mentor.ieee.org/802.11/dcn/25/11-25-0894-02-000m-ebcs-certificate-id.pptx>
       2. Review Submission
       3. Discussion on the proposed changes to EBCS info Frame.
       4. Privacy suggests not using the MAC address in the ID to avoid disclosure of identifiable information.
       5. Discussion on needing more discussion before making changes, but we may want to look into this topic in TGbi or here in a careful manner.
    8. **Modify agenda** to run the Minutes and Initial Letter Ballot motions today…. No objection.
    9. **Motion: (Slide 8)** 
       1. Approve the minutes in document:

March meeting 802-11-25/0470r0:

[https://mentor.ieee.org/802.11/dcn/25/11-25-0470-00-000m-minutes-for-revmf-2025-march-plenary-atlanta.docx](https://mentor.ieee.org/802.11/dcn/24/11-24-2109-00-000m-minutes-for-revmf-2025-january-interim-kobe.docx)

* + 1. Moved: Mark Hamilton
    2. Seconded: Stephen McCann
    3. **Results**: Unanimous – Motion Passes.
  1. **Initial WG LB Motion -0 (Slide 9)**
     1. Discussion on how long the LB has to be.
     2. Minimum is 30 days, but the consensus was it would be better to be longer.
     3. The delay of TGbh and TGbe is a concern.
     4. Discussion on how long the review of TGbh and TGbe will actually take to prepare the draft for the ballot.
     5. Original Motion:

Instruct the editor to prepare REVmf D1.0 and

Approve a 30-day Working Group Technical Letter Ballot asking the question “Should REVmf D1.0 be forwarded to SA Ballot?”

* + 1. More Discussion on what the motion actually says.
    2. Request to make the target “no earlier than July 25”.
    3. **Motion:** **Initial WG LB Motion**

Instruct the editor to prepare REVmf D1.0 and

Approve at least a 30-day Working Group Technical Letter Ballot that will complete no earlier than July 25th 2025 asking the question “Should REVmf D1.0 be forwarded to SA Ballot?”

Note: REVmf D1.0 will include the roll-in of 802.11bh-2024 and 802.11be-2024, and the content identified in approved changes in document 11-24/1925r6.

* + 1. Moved: Stephen McCann
    2. Second: Jon Rosdahl
    3. Results: 20 – Yes; 0 – No; 0 - Abstain. Motion Passes.
  1. **No objection to changing agenda** to discuss Telecon/Meeting Plan

* 1. **Teleconference/Meeting Plan**
     1. Telecon – 10 days’ notice
     2. AdHoc – None
     3. For the July Plenary Session – 5 slots.
  2. **Recess at 5:52 CEST**

1. **2025 May IEEE 802W Interim – Warsaw - TGmf (REVmf) Thursday 15 May PM2**
   1. **Called to order 4:05pm CEST by Mike Montemurro**
   2. **Introduction of officers**:
      1. Mike Montemurro (Huawei), Chair
      2. Mark Hamilton (Ruckus/CommScope), Vice Chair
      3. Mark RISON (Samsung), Vice Chair
      4. Po-Kai Huang (Intel), Editor
      5. Jon Rosdahl (Qualcomm), Secretary
   3. **Review Patent, Copyright and Participation policies**
      1. No items noted.
   4. **Review Agenda – 802-11-25/0590r3**
      1. <https://mentor.ieee.org/802.11/dcn/25/11-25-0590-03-000m-revmf-agenda-may-2025-session.pptx>
      2. Thursday May 15, 4pm CET
2. Agenda Approval
3. Contributions
4. Reduced ANQP latency – 11-25/270 – Neishaboori (GM)
5. Puncturing low-power AP – doc 11-25/288 – Salem/Hart (Cisco)
6. Diagnostic Subelement Augmentation – doc 11-25/809 – Jiang (Apple)
7. GCR Group Address – doc 11-25/850 – Sun (MediaTek)
8. Max channel switch time harmonization – doc 11-25/269 – Hart (Cisco)
9. PASN ID for MLO – doc 11-25/345 – Li (ZTE)
10. Adjourn
    * 1. Agenda add
         1. Potential AdHoc at Cambridge University.
         2. Add a couple submissions: 11-25/255 P2P TWT Harmonization – Hart
      2. Updated Agenda in 802-11-25/0590r4
    1. **Discussion on Potential AdHoc at Cambridge University**
       1. Oct – WFA is meeting in Amsterdam the 3rd Week of Oct
       2. WBA is the week prior
       3. Oct 28-30 is the target week.
       4. In the UK, the week after WFA is a school holiday
       5. We will consider this for now.
       6. Oct 6 may be a possible Santa Clara, CA venue sponsored by Mark H.
    2. **Contributions for today.**
    3. **Review doc11-25/270r5, Beacon Modification ANQP Exchange** -Azin Neishaboori, (General Motors)
       1. <https://mentor.ieee.org/802.11/dcn/25/11-25-0270-05-000m-beacon-modification-for-reduced-anqp-exchange-induced-latency.dotx>
       2. Review Submission
       3. Discussion on the improvements that are expected.
       4. Discussion on responses that occur faster than beacons, but you still need to find and listen to the valid APs.
       5. Discussion on how to solve the full problem, as this may only be a partial solution.
       6. Discussion on value of proposal to meet issue on finding an AP in a new environment.
       7. Discussion on on the NAI Realm hash, see 11.22.10.2, the first sentence has a “from a service name” that is not correct. Expect that this is a cut-n-paste error.
       8. Suggestion to reduce the NAI Realm fields being cited. There are other hash numbers, other than the Bloom hash.
       9. Any given AP might have an NAI Realm List that does not match some other AP, even though they both support the same SSP, if they also happen to support different other SSPs.
       10. Suggestion that Auto TIG may be very interested in this topic.
       11. Next Steps, if a comment in the LB with the proposed resolution prepared, we can consider this as part of the LB process.
    4. **Review doc 11-25/288 – Puncturing low-power AP –**Pelin Salem/ Brian Hart (Cisco)
       1. <https://mentor.ieee.org/802.11/dcn/25/11-25-0288-02-000m-puncturing-with-low-power-indoor-aps.docx>
       2. Review Submission
       3. Discussion on why the text was created to help the FCC see that we are addressing the allocation in this band and providing evidence of review and testing. The FCC has in the past adopted rules that were defined by the IEEE ahead of regulation adjustment.
       4. Are we starting the rule making process now also?
       5. Discussion on actions of a Composite AP.
       6. Discussion on why puncturing is a good method to avoid conflicts. The Annex has examples to show the use cases that can demonstrate protection of incumbents.
       7. Discussion on the use of “can”. Suggest to use “this may meet regulatory requirements”… or “regulations might allow”.
       8. Other Editorial changes will be sent to the authors.
    5. **Review doc 11-25/809 – Diagnostic Subelement Augmentation** –Jinjing JANG (Apple, Inc.)
       1. <https://mentor.ieee.org/802.11/dcn/25/11-25-0809-00-000m-diagnostic-subelement-augmentation-continued.docx>
       2. Review Submission.
       3. Previous submission 11-24/1854 was discussed, which will be implemented into the standard in the first draft.
       4. Discussion on removing “should” and “believe” from proposed text.
       5. Discussion on how to view the changes from the previous document that was approved in November 2024.
       6. Request to have baseline left all black, but for this submission, the green was from 11-25/1854, and other comments will come offline.
       7. Discussion on page 6, Device name field, rephrase to remove “should” and “believe”
       8. Discussion on use of session – how to determine what session or the reason code that it applies to.
       9. Suggestion on path forward. Draft 1.0 will include the 11-24/1854, so a comment on the LB can be made with a submission with the updated draft text.
    6. **Review doc 11-25/850 – CR Group Address** –Li-Hsiang Sun (MediaTek)
       1. <https://mentor.ieee.org/802.11/dcn/25/11-25-0850-00-000m-gcr-group-address-in-protected-m-ba.docx>
       2. Review submission
       3. Discussion on how fragmentation is happening. The fragmentation is more explained in 11-25/0260r7.
       4. Discussion on 9.3.1.8.6 – edits were noted.
       5. Discussion on usage of Block Ack Bitmap for GCR.
       6. More comments to be emailed to the author
    7. **Review doc 11-25/269 – Max Channel Switch Time harmonization** - Brian HART (Cisco)
       1. <https://mentor.ieee.org/802.11/dcn/25/11-25-0269-04-000m-max-channel-switch-time-harmonization.docx>
       2. Review submission.
       3. Q: What does "non-AP STA's channel switch" mean, to determine when it is completed? Brian will reword.
       4. Discussion on other Editorial Fix-ups – Email more feedback to author.
    8. **Review doc 11-25/255r4 – P2P TWT Harmonization –** Brian HART (Cisco)
       1. <https://mentor.ieee.org/802.11/dcn/25/11-25-0255-04-000m-p2p-twt-harmonization.docx>
       2. Review changes made in submission.
       3. Discussion 11.21.15 subclause for rewording discussed.
       4. More Discussion on the cascading if…then…
       5. Discussion on adding more definition or words around “Signaled Availability”.
       6. Request to have more review of the proposal. Request to exchange email on reflector.
    9. **Reminder to use the reflector** for exchange of information to gain more inclusion of ideas in a broader focus.
    10. **Adjourned at 5:45pm CEST**

**References:**