IEEE P802.11  
Wireless LANs

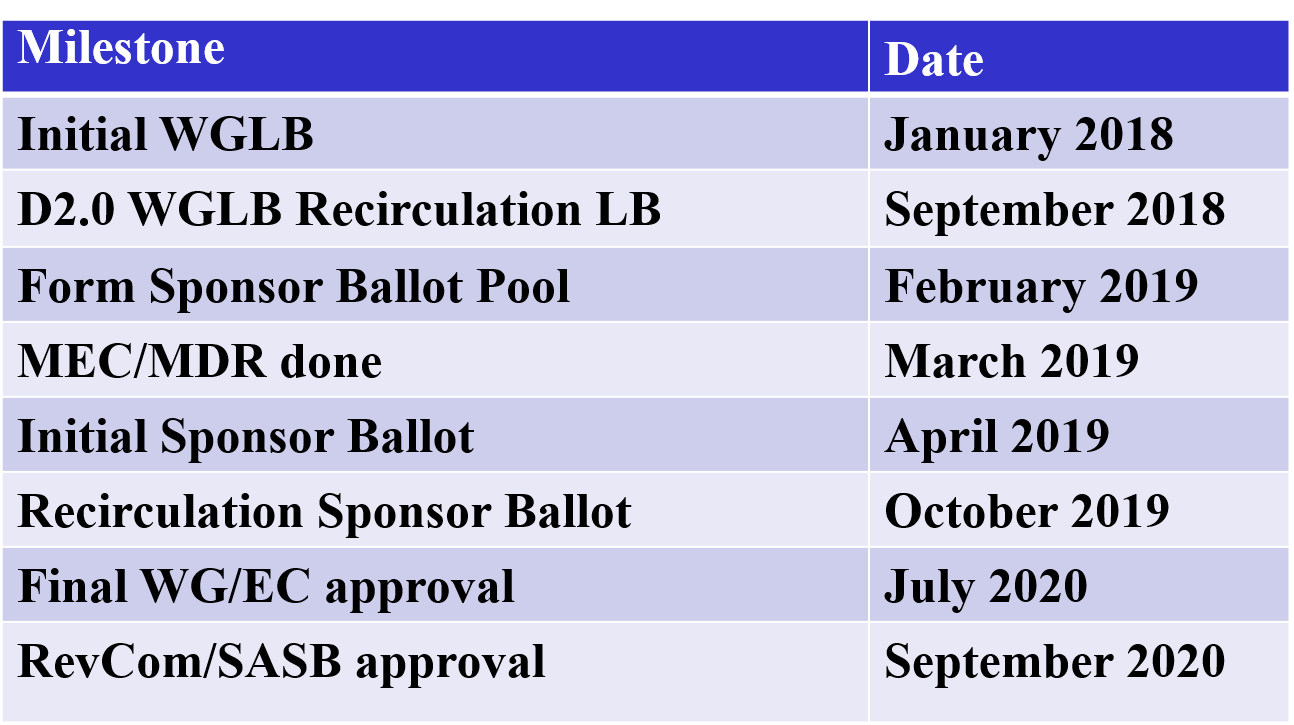
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| Minutes REVmd – January 2018 - Irvine | | | | |
| Date: 2018-01-18 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Jon Rosdahl | Qualcomm Technologies, Inc. | 10871 N 5750 W Highland, UT 84003 | +1-801-492-4023 | jrosdahl@ieee.org |
|  |  |  |  |  |

Abstract

Minutes for TGmd – REVmd project – task group meetings during the 2018 January IEEE 802 Wireless Interim at the Hotel Irvine, Irvine, California January 14-19, 2018

1. **Monday PM1: TGmd meeting in Irvine, CA 13:30-15:30 ET – 2018-01-15**
   1. **Called to order** at 1:30pm by the chair, Dorothy STANLEY (HPE)
   2. **Review Patent Policy** and Participation information
      1. No items noted
   3. **Review agenda:** 11-17/1871r1
      1. <https://mentor.ieee.org/802.11/dcn/17/11-17-1871-01-000m-january-2018-tgmd-agenda.pptx>
      2. Monday PM1

* Chair’s Welcome, Policy & patent reminder
* Approve agenda
* Status, Review of Objectives
* Editor Report 11-17-920r6
* MAC CIDs: 179, 180, 362, 351, 47, 339
* MAC CIDs: 14, 340, 341 (RNR)
* Guido HIERTZ – CID 289
  + 1. Monday PM2
* CIDs: 194, 222, 223 –recommend accept by M. WENTINK
* Huizhau/Sigurd/Menzo – 11-17-1738r1
* GEN CIDs: 108, 290, 292
* PHY CIDs: 273, 111, 289, 75
  + 1. Updates to the agenda were made an included in 11-17/1871r2
    2. **MOTION #I1**: Approve Agenda as 11-17/1871r2
       1. Moved: Stephen MCCANN, 2nd: Manish KUMAR
       2. **Results of Motion #I1**: Motion Passes unanimously.
  1. **Review Current TGmd Schedule**
     1. Slide 14



* 1. **Editor Report** – Emily QI
     1. Review comment resolution progress.
     2. No comments
  2. **MAC Comments:**
     1. CID 180 (MAC)
        1. Review comment
        2. The Proposed change would not improve the draft.
        3. Proposed Resolution: CID 180 (MAC): REJECTED (MAC: 2018-01-15 21:53:42Z): Not all state is reset or deleted. For example, clearly the state for the AP (link) is not reset, any PMKSA is not deleted, etc.
        4. No Objection - Mark Ready for Motion
     2. CID 179 (MAC)
        1. Review comment
        2. While we rejected CID 180, the change here seems to be agreeable for now.
        3. Proposed Resolution: CID 179 (MAC): REVISED (MAC: 2018-01-15 21:56:13Z): Add, as new paragraph at the end of step c): "In the case of reassociation to a different AP (the CurrentAPAddress parameter is not the new AP's MAC address), all the states, agreements and allocations listed above are deleted or reset to initial values."
        4. No Objection – Mark Ready for Motion
     3. CID 362 (MAC)
        1. Review comment
        2. Discussion of proposed change and the context.
        3. Proposed Resolution: CID 362 (MAC): REVISED (MAC: 2018-01-15 21:59:41Z): Change "Reason Code" to "Status code" at P741L35 and P1780L21.
        4. No Objection – Mark Ready for Motion.
     4. CID 351 and 47 are already marked “Ready for Motion”
     5. CID 339 (MAC)
        1. Assigned to Ganesh, and pending input later this week.
     6. CID 14 (PHY)
        1. Assigned to Roger MARKS – he sent feedback.
        2. Discussed the fact that an editorial error on this sentence caused some confusion.
        3. The CID that caused the confusion was CID 102 and CID 114 and we should have the Editor fix that and make it match what was approved.
        4. For CID 14, we will mark it as rejected for insufficient detail.
        5. Proposed Resolution: CID 14 (PHY) Rejected: The comment fails to identify changes in sufficient detail so that the specific wording of the changes that will satisfy the commenter can be determined.
        6. No Objection – Mark Ready for Motion.
     7. CID 340 (MAC)
        1. Review status of discussion
        2. Roger MARKS has asked to defer until the next ballot.
        3. Proposed Resolution: CID 340 (MAC): REJECTED (MAC: 2018-01-15 22:13:52Z): Withdrawn by commenter pending relevant developments in Tgba.
        4. No Objection – Mark Ready for Motion
     8. CID 341 (MAC)
        1. Need to take more time for crafting response.
        2. Review context of the comment.
        3. This particular field is set to one if the “SSID of APS “. Change discussion about if we add “every” or “each” and what it may mean.
        4. Discussion on that this paragraph is meaning.
        5. Proposed Resolution: CID 341 (MAC): Revised; Change the paragraph at Page 1185 Lines 18-23 as follows: "The Filtered Neighbor AP subfield is 1 bit in length. When included in the Probe Response frame, it is set to 1 if the SSID of <insert>every</insert> AP<delete>s</delete> in this Neighbor AP Information field matches the specific SSID in the corresponding Probe Request frame. When included in the Beacon frame, it is set to 1 if the SSID of <insert>every</insert> AP<delete>s</delete> in this Neighbor AP Information field matches the specific SSID in the containing Beacon frame. It is set to 0 otherwise.
        6. No objection – Mark Ready for Motion
     9. CID 289 (PHY)
        1. Assigned to Guido HIERTZ
     10. CID 194 (MAC)
         1. Review comment
         2. Proposed Resolution: CID 194 (MAC): ACCEPTED (MAC: 2018-01-15 22:26:05Z)
         3. No Objection – Mark Ready for Motion
  3. CID 222 and 223 (GEN)
     + 1. Review comment
       2. Email exchange agreed accept
       3. Proposed Resolution: ACCEPTED (GEN: 2018-01-15 22:27:30Z)
       4. No Objection – Mark Ready for Motion
  4. **More MAC CIDS**
     1. CID 3 (MAC)
        1. We have this topic being presented to TGay, so the Commenter would like to withdraw for now.
        2. Proposed Resolution: CID 3 (MAC): REJECTED (MAC: 2018-01-15 22:29:34Z): The comment fails to identify changes in sufficient detail so that the specific wording of the changes that will satisfy the commenter can be determined.
        3. No Objection – Mark Ready for Motion
     2. CID 106 (MAC)
        1. Review comment history
        2. Review Comment
        3. Short discussion on the merits.
        4. Proposed Resolution; CID 106 (MAC): REJECTED (MAC: 2018-01-15 22:39:47Z): The comment fails to identify changes in sufficient detail so that the specific wording of the changes that will satisfy the commenter can be determined.
        5. No Objection – Mark Ready for Motion
     3. CID 116 (MAC)
        1. Review Comment
        2. More work would need to be done than has been to resolve other than reject.
        3. Proposed resolution: CID 116 (MAC): REJECTED (MAC: 2018-01-15 22:41:02Z): The comment fails to identify changes in sufficient detail so that the specific wording of the changes that will satisfy the commenter can be determined.
        4. No Objection – Mark Ready for Motion
     4. CID 251 (MAC)
        1. Add to the Matthew FISCHER document.
     5. CID 290 (MAC)
        1. Review comment
        2. Unsure on the path forward – Mark HAMILTON to work on this further.
     6. CID 305 (MAC)
        1. Review comment
        2. No submission is pending
        3. Proposed Resolution: CID 305 (MAC): REJECTED (MAC: 2018-01-15 21:41:53Z): The comment fails to identify changes in sufficient detail so that the specific wording of the changes that will satisfy the commenter can be determined.
        4. No Objection – Mark Ready for Motion
     7. CID 337 (MAC)
        1. Review Comment
        2. Still waiting on feedback – Commenter agreed to reject for now.
        3. For now, will reject.
        4. Proposed Resolution: CID 337 (MAC): REJECTED (MAC: 2018-01-15 22:48:27Z): The comment fails to identify changes in sufficient detail so that the specific wording of the changes that will satisfy the commenter can be determined.
        5. No Objection – Mark Ready for Motion
     8. That leaves 3 CIDs not included in the obsolete or Matthew FISCHER batch.
  5. **Review Doc 11-17/1738r1** – Menzo WENTINK
     1. <https://mentor.ieee.org/802.11/dcn/17/11-17-1738-01-000m-setting-ccf0-for-20-40mhz-bss-bw.docx>
     2. Abstract: This submission is to address an inconsistence in Table 9-242 (VHT Information Operation subfields) in assigning CCFS0 when the BSS bandwidth is less than 80 MHz.
     3. Review submission
     4. Missing “20,40” from a couple locations.
     5. Concern with the ramifications of this simple change.
     6. Discussion of what an old device and new device behaviour would be like.
     7. ACTION ITEM #I1: The chair to send an email highlighting the submission to the Reflector. The plan would be to bring a motion on Wednesday.
  6. **GEN CIDs**
     1. CID 108 (GEN)
        1. Review comment
        2. Need to review – Jouni MALINEN asked to review
     2. CID 292 (GEN)
        1. Review Comment
        2. Need review – was assigned to Carlos CORDIERO to review
  7. **PHY CIDs**
     1. CID 111, 6, 366, 367 and 368(PHY)
        1. All the commenters have asked to withdraw the CID.
        2. A Resolution of Reject The comment has been withdrawn by the commenter for each CID.
        3. No objection – Mark Ready for Motion
  8. **Review doc 17/1089r10** - Mike MONTEMURRO
     1. <https://mentor.ieee.org/802.11/dcn/17/11-17-1089-10-000m-revmd-cc25-comment-resolutions.doc>
     2. CID 75 (PHY)
        1. Review Comment
        2. P2556.37 for context
        3. Request for more time to review was requested.
     3. CID 361 (PHY)
        1. Review comment
        2. VHT-SIG-B Definition issue
        3. Review Table 21-1
        4. Discussion on possible resolution wording.
        5. More work is needed.
     4. CID 360 (PHY)
        1. Review comment
        2. PPDU bandwidth issue
        3. Review context of proposed change.
        4. Proposed new definitions discussed.
        5. Seek volunteer to rewrite the definition.
        6. More work is needed.
  9. CID 292 (GEN)
     1. Email was received from Carlos CORDIERO
     2. Proposed Resolution: REVISED (GEN: 2018-01-15 23:30:10Z) change cited text to "where a PCP doze BI shall not start with a BTI or ATI"
     3. No objection – Mark Ready for Motion
  10. **Recessed at 3:30pm**

1. **Monday PM2: TGmd meeting in Irvine, CA 16:00-18:00 ET – 2018-01-15**
   1. **Called to order** at 4:01pm by the chair, Dorothy STANLEY (HPE)
   2. **Review Patent Policy**
      1. No items noted
   3. **Review agenda:** 11-17/1871r3
      1. <https://mentor.ieee.org/802.11/dcn/17/11-17-1871-03-000m-january-2018-tgmd-agenda.pptx>
      2. No objection to continuing with agenda
   4. **Review doc 11-18/203r0** – Gabor BAJKO
      1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0203-00-000m-csa-enhancement.docx>
      2. Abstract: [In the current standard there is a mechanism defined for the AP to announce when it wants to move to a different channel (the CSA or the extended CSA mechanism).

If the new channel the AP wants to move to is under DFS regulation, the prerequisites for operation defined by regulatory bodies sometimes entail a delay in the AP being able to operate in the new channel, and this leaves the STAs in limbo as to when the AP will start operating in the new channel. The standard does not have an indication for the AP to indicate on how long the channel switch would take and when could the STA expect to see beacons from the AP in the new channel.

There are a variety of time constraints the AP might have to obey to before it can start operating in the new channel:

- the AP wants to move to a DFS channel, in the US the AP it might only start operating in the new channel 60sec after it stops operating in the old channel (since FCC requires 60 sec CAC on the new channel)

- the AP wants to move to a DFS channel, in the EU the AP might only start operating in the new channel 60 sec to 10 min after it stops operating in the new channel if it does not have a CAC clearance.

- The AP might have a dedicated radio for monitoring DFS channels and thus be able to move to the new channel immediately

- The AP implementation might require some time to switch channels even if the new channel is not a DFS channel

This submission defines a new element to convey the time between sending the last beacon in the current channel and the first beacon in the new channel. The AP using CSA or extended CSA could include this element in the beacon or probe responses.

The submission also defines a new CSA action frame which carries the above timer value.

A corresponding STA capabilities is also defined.

* + 1. Review submission
    2. Suggestion on the Maximum Switch time delay as it should be a bounding description.
       1. This could be a longer name, but it is what it is.
    3. Concern on the delay that may have occurred when switching. If you wait 10 minutes, then a user may want to switch much quicker.
       1. The station may not like the 10 minutes, but it could come back and scan again after that time.
    4. The key is that this is giving more information for decision making.
    5. After the discussion, there seemed to be support for the direction, but maybe issues with the element names. Bring revision back for Wednesday discussion.
    6. Question on the use of “…should also include the Channel Switch Time Delay element” and if the “should” is ok or not.
    7. Discussion on the compliance of old vs new devices.
    8. Will bring back on Wednesday.
  1. **Review Doc 11-18/171r0** – Chris HANSEN
     1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0171-00-000m-vendor-specific-request.docx>
     2. Abstract: Draft text changes to incorporate a Vendor Specific Request Element in 802.11md are described here.
     3. CID 5 & 7 (PHY)
        1. Review submission
        2. Discussion on the use of OI (Organization Identifiers).
        3. Discussion on how an OI and OUI has been defined.
        4. Can a length be added to make parsing multiples?
        5. Need to be sure we don’t cause our RAC approval to be lost.
        6. Vendor Specific Elements are out there, but how do we request them?
        7. Discussion on what the method would be to allow Vendors to make request.
        8. How to allow APs to have multiple Vendor specific information pieces that they can respond with.
        9. Discussion on whether we have or have not got a use case to describe the need for this change.
        10. This method is to allow a generic method to gather Vendor Specific Information from the AP.
        11. More discussion offline should be done.
  2. **Review Agenda** and assign times for CID 108, 339 and 290 to Wednesday PM1
     1. Will make a revision R4.
  3. **Review the outstanding CIDs** on Agenda and plan for the week.
  4. **Review the prepared Motions that are in 11-17/1871r3**.
     1. Update the revisions as needed.
  5. ACTION ITEM #I2: All Task Group members asked to review the documents that will be discussed on Tuesday for CIDs for obsolete removal.
     1. Tuesday PM1
* Review submissions, Motions for Obsolete CIDs, see next slide
* 11-17-1192 ESP CIDs – Matthew Fischer
* 11-17-1890, 1807 – Nehru Bhandaru
  + 1. A review of GEN Comments will be offline to ensure set of Submission required are clear.
  1. **Request to modify the Agenda**
     1. Add Sean COFFEY to the agenda – 11-17/1479r2 – CID 77
     2. No objection to add to agenda
  2. **Review document 11-17/1479r2** – Sean COFFEY
     1. <https://mentor.ieee.org/802.11/dcn/17/11-17-1479-02-000m-cca-sensitivity.pptx>
     2. Abstract: All OFDM-based PHYs in 2.4 GHz and 5 GHz have the same basic requirement for CCA sensitivity, though with significantly different surrounding definitions.

There are some problems: the definitions are unsatisfactory in various ways, especially for the case where there is significant interference.

This presentation outlines the problems and proposes an outline of the form of a solution.

CIDs addressed: 77

* + 1. Review submission
    2. HT vs VHT compliance with requirements
    3. Summary and Candidate Solution: (Slide 9)
  + A characterization of the problem:
    - Deployed devices seem to work just fine—the problem is bringing the specification into alignment with normal behaviour
    - The “spirit” of the current -82 dBm threshold should be maintained, while not giving devices an impossible task
    - This is tricky, because interference in its most general forms cannot be assumed to fit any given model (unlike thermal noise in the receiver)
  + Candidate solution:
    - Require initial CCA busy if RSSI > -82 dBm *and* a reference detector would detect the beginning of a VHT/HT/etc. PPDU within 4 ms (> 90%)
      * Reference detector an autocorrelator with given bitwidth, with suitably low a priori probability of signal present (to provide implementation margin)
  + Change each of clauses 17, 19, 21 accordingly (& require for all PPDUs)
    1. Discussion on the presentation
       1. Can we just state we don’t need the interference requirement?
          1. A. That’s a choice we could make, but we are left with no cover for the practical case of over-the-air transmissions where there is interference.
       2. Discussion on what it says vs what we see deployed and put in the field.
       3. What to do for testing for those devices that are not cable-able?
          1. A. That’s a valid point, but it’s a separate issue.
       4. The concern is this is one of many “normative” requirements that are specified and no clear method on how to test for compliance.
       5. Discussion on the environment that the test can be used in and how it will be determined to be compliant.
       6. Discussion on the problem statement (see slide 9).
       7. Changes in the wording of the older PHY and New PHY specs have caused the difference in the language on how receiver sensitivity is specified.
       8. The standard does not have to specify all the tests for compliance.
       9. No change to the standard should make existing devices (deployed) non-compliant. (There was no disagreement on this point.)
       10. Discussion on the use of the autocorrelator and the test environment.
       11. Concern on adding a new requirement.
           1. Commenter would prefer the simplest test for VHT extended to cover all cases.
       12. CCA should be over the air requirement. –
    2. **Straw poll**
       1. Do you agree with the solution outline described in slide 9?
       2. Results: 4 Yes 2 No 16 Unsure / need more information / abstain
  1. **CID 108 (GEN)**
     1. An update to the Comment proposal made by Jouni MALINEN
     2. CID 108 - rebased on top of REVmd/D0.5 and cleaned up the proposed changes:

REVISED - Replace

'Management frame protection protocols in an MBSS apply to individually addressed frames after establishment of the RSNA MTK, and to group addressed frames indicated as "Group Addressed Privacy" in Table 9-47 (Category values).'

with

'Management frame protection protocols in an MBSS apply to the following

frames:

- Individually addressed robust Management frames after establishment

of the RSNA MTK,

- Group addressed robust Management frames that are specified with

"Yes" in the "Group Addressed Privacy" column of Table 9-53 (Category

values) after establishment of the RSNA MGTK, and

- Group addressed robust Management frames that are specified with

"No" in the "Group Addressed Privacy" column of Table 9-53 (Category

values) after establishment of the RSNA IGTK.

See 14.7 (Mesh Security) for details.'

* + 1. The Comment was correct about the RSNA IGTK that needed to be added and this cleans up the text.
    2. The changes here are based on d0.5 rather than the original comment on d0.1.
    3. Proposed Resolution: REVISED (GEN: 2018-01-16 01:38:23Z) Replace

'Management frame protection protocols in an MBSS apply to individually addressed frames after establishment of the RSNA MTK, and to group addressed frames indicated as "Group Addressed Privacy" in Table 9-47 (Category values).'

with

'Management frame protection protocols in an MBSS apply to the following frames:

- Individually addressed robust Management frames after establishment of the RSNA MTK,

- Group addressed robust Management frames that are specified with "Yes" in the "Group Addressed Privacy" column of Table 9-53 (Category values) after establishment of the RSNA MGTK, and

- Group addressed robust Management frames that are specified with "No" in the "Group Addressed Privacy" column of Table 9-53 (Category values) after establishment of the RSNA IGTK. See 14.7 (Mesh Security) for details.'

* + 1. No Objection – Mark Ready for Motion
  1. **Recess 5:40pm**

1. **Tuesday PM1: TGmd meeting in Irvine, CA 13:30-15:30 ET – 2018-01-16**
   1. **Called to order** at 1:34pm by the chair, Dorothy STANLEY (HPE)
   2. **Review Patent Policy**
      1. No items noted
   3. **Review agenda:** 11-17/1871r4
      1. <https://mentor.ieee.org/802.11/dcn/17/11-17-1871-04-000m-january-2018-tgmd-agenda.pptx>
      2. Tuesday PM1

* Review submissions, Motions for Obsolete CIDs, see next slide
* 11-17-1192 ESP CIDs – Matthew FISCHER
* 11-17-1890, 1807 – Nehru BHANDARU
* 11-18-0202 – Dan HARKINS
  + 1. No changes – No objection
  1. **Review doc 11-17/1518r3** – Menzo WENTINK
     1. <https://mentor.ieee.org/802.11/dcn/17/11-17-1518-03-000m-resolution-cids-59-62-remove-dls-stsl.docx>
     2. Title: Resolution for CIDs 59 and 62 “Remove DLS and STSL”
     3. Abstract: This submission proposes resolutions for CID 59 and 62.
     4. Review Submission
     5. Changing of EAPOL-Key “SM” to reserved is a temporary state and can have the final deletion later.
     6. Discussion – None
     7. **Motion #25 – Remove DLS and STSL**
        1. Resolve CIDs 59 and 62 as “Revised” with a resolution of “Incorporate the text changes indicated in11-17/1518r3 <<https://mentor.ieee.org/802.11/dcn/17/11-17-1518-03-000m-resolution-cids-59-62-remove-dls-stsl.docx> > into the TGmd draft. These changes remove both the DLS and STSL capabilities.
        2. Discussion - None
        3. Moved: Menzo WENTINK 2nd: Graham SMITH
        4. **Results of Motion #25: 20-0-0** Motion passes
  2. **Review document 11-17/1519r4** – Menzo WENTINK
     1. <https://mentor.ieee.org/802.11/dcn/17/11-17-1519-04-000m-resolution-cid-65-remove-pcf.docx>
     2. Title: Resolution for CID 65 “Remove PCF”
     3. Review submission.
     4. Discussion - None
     5. **Motion #26: Remove PCF**
        1. Resolve CIDs 65 as “Revised” with a resolution of “Incorporate the text changes indicated in 11-17/1519r4 < <https://mentor.ieee.org/802.11/dcn/17/11-17-1519-04-000m-resolution-cid-65-remove-pcf.docx>> into the TGmd draft. These changes remove the PCF capability.
        2. Moved: Menzo WENTINK 2nd: Graham SMITH
        3. Discussion - None
        4. **Results of Motion #26: 20-0-0** Motion passes
  3. **Review document 1137r8** – Menzo WENTINK
     1. <https://mentor.ieee.org/802.11/dcn/17/11-17-1137-08-000m-resolutions-for-obsolete-blockack.docx>
     2. Abstract: This submission proposes resolutions for CIDs 57, 58, 61 and 70

R2 CIDs 70 and 137 added

R5 has edits by Menzo plus results of discussions Dec 7th 2017

R6 and 7 have additions based upon the discussions on Dec 7th 2017, Jan 5, 2018

* 1789.17 para deleted
* 784.21, new sentence
* Clause 10.24 changes
  + 1. Review the scope of the changes - Basic BlockAckReq, Basic BlockAck, non-HT BlockAck and HT Delayed BlockAck
       1. The HT Delayed BlockAck is not included in this revision, but could add if we determine it is necessary
    2. CID 57, 58, 61 and 137 are included in this revision.
    3. Review submission
    4. Discussion on HT-Delayed instructions that need removed:
       1. 3588.05 – delete the instruction
          1. The Options were generic and should be left – related to HT delayed.
       2. Removed the following also
* 3593 delete lines 25-29
* 3594 delete lines 22-26, replace vertical bar on previous line with semi-colon
* 3594 delete lines 56-61, replace vertical bar on previous line with semi-colon
* 3588.59 delete NOTE - keep line "[RTS CTS] (BlockAckReq BlockAck) | "
  + Could not locate any “Note” so delete instruction
    1. Some of the page numbers should be adjusted to match the document rather than the PDF search file. The search page for Adobe is listed and in some cases the page number in parenthesis is the actual page.
    2. After discussion just delete “3588.06 delete line “
    3. Post R10 of the document.
    4. **Motion #27: Remove BlockAckReq, Basic BlockAck variant, Non-HT block ack,**
       1. Resolve CIDs 57, 58, and 61 **“Revised” with a resolution of “Incorporate** the text changes indicated in 11-17/1137r10: < <https://mentor.ieee.org/802.11/dcn/17/11-17-1137-10-000m-resolutions-for-obsolete-blockack.docx> > into the TGmd draft. These changes remove BlockAckReq, Basic BlockAck variant, Non-HT block ack, HT-delayed block ack capabilities.
       2. Moved: Menzo WENTINK 2nd: Graham SMITH
       3. Discussion: None
       4. **Results of Motion #27: 16-0-1** Motion passes
    5. Straw Poll: HT-delayed block ack (CID 70)
       1. HT-delayed block ack capabilities should be
* Retained
* Deleted
* Abstain
  + - 1. Discussion: not unhappy to see it deleted, but some may think it could be useful in some corner cases. -
      2. Results: 0-6-12 – abstains were in majority.
    1. CID 70 (MAC)
       1. Proposed Resolution: CID 70 (MAC): REJECTED (MAC: 2018-01-16 22:38:16Z): The comment fails to identify changes in sufficient detail so that the specific wording of the changes that will satisfy the commenter can be determined.
       2. No objection – Mark Ready for Motion
  1. Thanks to Menzo and Graham for all the significant effort that they have done to complete this work.
  2. **Review doc 11-17/1238r2** – Dorothy STANLEY
     1. <https://mentor.ieee.org/802.11/dcn/17/11-17-1238-02-000m-resolution-for-obsolete-dmg-ofdm.docx>
     2. There is a reference in I.4 to a sample document that may need to be updated if we remove the DMG-OFDM. It has not been reviewed yet.
     3. The document 11-17/1238r2 has been reviewed, and no changes were suggested from TGay.
     4. **MOTION #28: Remove DMG OFDM PHY**
        1. Resolve CID 64 as “Revised” with a resolution of “Incorporate the text changes indicated in <https://mentor.ieee.org/802.11/dcn/17/11-17-1238-02-000m-resolution-for-obsolete-dmg-ofdm.docx> into the TGmd draft. These changes remove the DMG OFDM PHY.
        2. Moved: Graham SMITH 2nd: Chris HANSEN
        3. Discussion: None
        4. Results of Motion #28: 17-0-0 Motion Passes
  3. **Review Doc 11-17-1192r14 ESP CIDs** – Matthew FISCHER
     1. <https://mentor.ieee.org/802.11/dcn/17/11-17-1192-14-000m-cr-esp.docx>
     2. “Outbound Air Time List” field consists of a field of bits numbered 0 to k.
     3. The language may seem complex, but changing it would make vague.
     4. Top of page 16, the global replace will fix the use of Estimated Service Parameters.
     5. Change references to “An ESP STA that is not an AP”
     6. Understanding how the ESP estimate is not clearly explained.
     7. There isn’t much value including ESP parameters in Beacons and Probe Responses.
     8. We should postpone work on this until we understand how we can use ESP.
     9. There are existing implementations and there is an organization that is testing interoperability.
     10. The ESP element is only required in Probe Response if it is requested by a STA, or the AP is configured to provide this information.
     11. There are concerns with responding in the Probe Response with the Outbound element. The Outbound reliability has less accuracy compared to the Inbound value.
     12. The Inbound and Outbound elements are only transmitted when they are requested.
     13. There are multiple implementations of the downlink ESP element and the information is useful in WLAN mobility where it can be used for AP selection.
     14. There has been no demonstrated benefit in the use of this feature.
     15. Proposal to defer comment resolutions on this feature to the next round of letter ballot.
     16. The author has been open to addressing concerns on this proposal since it was originally proposed in July.
     17. Take the discussion offline and consider the proposal during a session later in the week.
  4. **Review Doc 11-17-1890r0** – Nehru Bhandaru
     1. <https://mentor.ieee.org/802.11/dcn/17/11-17-1890-00-000m-comments-on-sae-state-machine.docx>
     2. Title: Comments on SAE State Machine
     3. Abstract: SAE provides robust authentication with a password in an 802.11 RSN that results in the establishment of a PMK (section 12.4 of [1]). It includes the SAE state machine and a description of the processing upon receving various state machine events when a frame from a peer is received or other local management action. This document draws attention to few aspects related to SAE state machine as currently described.
* Indicator *BadAuth* used in transitions from *Confirmed* and Accepted states is not described, whereas indicator *BadConf* (section 12.4.8.5.2) is described but not used.
* A bad *Confirm* frame is discarded in *Accepted* state vs. in the *Confirmed* state the PMK is deleted which results in a teardown of the state machine making it more susceptible denial of service attacks.
* Upon receiving a *Confirm* message in *Committed* state, cancelling the timer and incrementing the *Sync* counter makes it more susceptible to denial of service attacks.

Minor changes to the specification [1] are also proposed to improve the above aspects.

* + 1. Review Submission
    2. Review “*Denial of Service from a mismatched verifier in Confirmed state”*
    3. Discussion on what should be put in the state machine when if we remove con(BadAuth)/Del.
    4. Discussion on history of the AES verification was done.
    5. Discussion on caution of changing the state machine.
    6. Review “*Denial of Service from a Sync counter increment on Con event in Committed state”*
       1. If we remove a state, then something must be put in its place.
       2. Discussion on of the failure and the description of the state machine.
    7. Ran out of Time.
  1. Reschedule to finish on Wednesday PM1 and also Dan HARKIN’s Doc 11-18/202.
  2. **Recess at 3:33pm**

1. **Wednesday PM1: TGmd meeting in Irvine, CA 13:30-15:30 ET – 2018-01-17**
   1. **Called to order** at 1:34pm by the chair, Dorothy STANLEY (HPE)
   2. **Review Patent Policy**
      1. No items noted
   3. **Review agenda:** 11-17/1871r6
      1. <https://mentor.ieee.org/802.11/dcn/17/11-17-1871-06-000m-january-2018-tgmd-agenda.pptx>
      2. Wednesday PM1

* Minutes, Telecon and November/Jan CID motions
* PHY CIDs: 75, 360, 361
* MAC CIDs 339, 290
* 11-17-1890, 1807 – Nehru BHANDARU
* 11-18-0202 – Dan HARKINS
* 11-18-0227 – Jouni MALINEN
  + 1. Move PHY CIDs to Wed PM2
    2. Move MAC CIDs to Wed PM2
    3. Gabor – present the changes to his doc at motion time.
    4. GEN CID 292 will be discussed at Motion time.
    5. No objection to the agenda changes.
  1. Motions:
     1. **Motion #29: Telecon, Ad-hoc and Orlando CIDs**
        1. Approve the comment resolutions on the

“PHY Motion F” tab in 11-17/ 930r12: <https://mentor.ieee.org/802.11/dcn/17/11-17-0930-12-000m-revmd-cc25-phy-plus-comments.xls>

“Motion MAC-I, Motion MAC-J and Motion MAC-K” tabs in 11-17/0927r13: <https://mentor.ieee.org/802.11/dcn/17/11-17-0927-13-000m-revmd-mac-comments.xls>

“Dec Telecon” , “Gen Motion – Dec Telecon”, “Gen Motion-Oct” and Gen Motion AdHoc”, tabs in 11-17/928r7: <https://mentor.ieee.org/802.11/dcn/17/11-17-0928-07-000m-revmd-cc25-gen-comments.xlsx>

“Motion EDITOR2 – D” tab in 11-17/0929r6: <https://mentor.ieee.org/802.11/dcn/17/11-17-0929-06-000m-revmd-editor2-comments.xlsx>

* + - 1. Moved: Jon ROSDAHL, 2nd: Chris HANSEN
      2. Discussion: None
      3. **Results of Motion #29: 16-0-1** Motion Passes
    1. **Motion #30: Address Inconsistency in Assigning CCF0 Value For BSS Bandwidth**
       1. Incorporate the text changes indicated in <https://mentor.ieee.org/802.11/dcn/17/11-17-1738-01-000m-setting-ccf0-for-20-40mhz-bss-bw.docx> into the TGmd draft.
       2. Moved Menzo WENTINK; 2nd: Huizhao WANG
       3. Discussion: None
       4. **Results of Motion #30: 18-0-0** Motion Passes.
    2. **Motion #31: DMG PHYCONFIG\_VECTOR parameters**
       1. Incorporate the text changes indicated in <https://mentor.ieee.org/802.11/dcn/17/11-17-1810-01-000m-20-2-3-phyconfig-vector-parameters.docx> into the TGmd draft.
       2. Moved: Mike MONTEMURRO 2nd: Claudio DA SILVA
       3. Discussion: None
       4. **Results of Motion #31: Passed** with Unanimous Consent without objection.
    3. **Motion #32: Golay sequence numbering**
       1. Incorporate the text changes indicated in <https://mentor.ieee.org/802.11/dcn/17/11-17-1811-00-000m-20-11-golay-sequences.docx> into the TGmd draft.
       2. Moved: Carlos CORDIERO 2nd: Claudio DA SILVA
       3. Discussion: None
       4. **Results of Motion #32: 17-0-1** Motion Passes
    4. **Motion #33: Irvine CIDs**
       1. Approve the comment resolutions on the

“PHY Motion G” tab in 11-17/930r12: <https://mentor.ieee.org/802.11/dcn/17/11-17-0930-12-000m-revmd-cc25-phy-plus-comments.xls>

“Motion MAC-L” tab in 11-17/927r13: <https://mentor.ieee.org/802.11/dcn/17/11-17-0927-13-000m-revmd-mac-comments.xls>

“Gen Motion - Jan” and “Submission Required” tabs in 11-17/0928r7 <https://mentor.ieee.org/802.11/dcn/17/11-17-0928-07-000m-revmd-cc25-gen-comments.xlsx> except for CID 292

* + - 1. Moved: Jon ROSDAHL 2nd: Edward AU
      2. Discussion: None
      3. **Results for Motion #33: 18-0-2** Motion Passes
    1. **Motion #34: CID 292**
       1. Resolve CID 292 as

"REVISED; at 1698.8 (D0.1) Replace “where a PCP doze BI may not start with a BTI or ATI” with “where a PCP doze BI need not start with a BTI or ATI (see 11.2.7.3.3)”

* + - 1. Moved: Jon ROSDAHL, 2nd: Mike MONTEMURRO
      2. Discussion:
         1. Reviewed the context of the change. D0.1- P1698.8
         2. Initial reaction when we talk about it yesterday was to accept the change from “may” to “shall”, however on D0.5 2037.12, we see that a “should” is there, and so it permitted, but not required. So then change the “may” to “need not” and then add a reference to the sentence.
      3. **Results of Motion #34: 16-0-2** Motion passes
    1. **Motion #35: Fix 11ah editing error**
       1. At 3176.35 (D0.5) delete the words “if 1 MHz Duplicate PPDU as described in”

Duplication and phase rotation: Duplicate 6 symbols of SIG field over each 1 MHz of the CH\_BANDWIDTH if 1 MHz Duplicate PPDU. Apply the appropriate phase rotation for each 1 MHz subchannel as described in if 1 MHz Duplicate PPDU as described in 23.3.9.12 (1 MHz and 2 MHz duplicate transmission) and 23.3.7 (Mathematical description of signals).

* + - 1. Moved: Youhan KIM 2nd: Mark HAMILTON
      2. Discussion: We had previously addressed several comments on the TGah editor errors that needed to be fixed. We have this one last change that needed to be done.
      3. **Results of Motion #35: Motion Passes** without objection my unanimous consent.
  1. **Review Submission 11-18/0203r1** – Gabor
     1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0203-01-000m-csa-enhancement.docx>
     2. Review the changes that have been made since Monday’s review.
     3. Only two comments were received suggesting improvements.
     4. New text added to Clause 11 – Extended Channel Switch Announcement element and the Channel Switch Announcement element.
     5. Discussion on the Channel Switch Count field.
     6. Discussion on the possible change of behaviour due to this change and affect to existing STA.
     7. Given that there is not complete consensus, Gabor is to take the feedback and come back with a possible revision later.
  2. **Review submission 11-17/1890r1** - Nehru BHANDARU
     1. <https://mentor.ieee.org/802.11/dcn/17/11-17-1890-01-000m-comments-on-sae-state-machine.docx>
     2. Review changes from prior revision
     3. No questions
     4. Motion #36 – SAE state machine
        1. Incorporate the text changes indicated in <https://mentor.ieee.org/802.11/dcn/17/11-17-1890-01-000m-comments-on-sae-state-machine.docx> into the TGmd draft.
        2. Moved: Nehru BHANDARU 2nd: Chris HANSEN
        3. Discussion: None
        4. **Results of Motion #36 – 10-0-3** Motion Passes.
  3. **Review submission 11-17/1807r3** Nehru BHANDARU
     1. <https://mentor.ieee.org/802.11/dcn/17/11-17-1807-03-000m-defense-against-multi-channel-mitm-attacks-via-operating-channel-validation.docx>
     2. Title: Defence against multi-channel MITM attacks via Operating Channel Validation
     3. Abstract: Several possible MITM attacks [1] that force an IV reset of a key, with associated security ramifications, have recently been disclosed against implementations of RSN specified in the 802.11 standard [2]. While there is no immediate known threat from deficiencies in RSNA protocols as currently specified, it would be prudent to provide some protection against MITM, in particular multi-channel MITM [3], in a future revision of the standard to protect against transparent (undetected), reliable and targeted MITM attacks. This submission provides normative language and recommendations to protect against MITM in an RSN where an attacker can masquerade as a legitimate AP on one channel and a legitimate non-AP STA on another channel in an Infrastructure network. In this document, IEEE 802.11 draft revision ‘Draft P802.11REVmd\_D0.3.pdf’ [7] is used as the base version when describing the proposed changes.
     4. Review submission
     5. Discussion – editor instructions were not noted properly – Mesh and PICS should be done for a complete submission.
     6. This addresses one MITM attack, but not all cases. The OCI protects on the same channel.
     7. The format of the Element is missing Country String and use the Global operating table (E4) and this should be updated to make operating class global with the new table.
     8. With the Annex E Table you only need to give the primary channel and the table gives the sub channels – the KDE may not be complete –
     9. List of frames to protect – should add WMN sleep mode
     10. Discussion on defining what the behaviour is after the timeout occurs.
         1. More discussion offline should occur.
     11. SA Query Request Frame – why not give size in Octets for the OCI Element (O or N) the N should be the actual number.
     12. Editor comment on the format of the submission that should include the page and line number where the edits are to be made on, and use cross out for delete and underscore for adds.
     13. ACTION ITEM #I3:  Nehru BHANDARU to update and bring revision next session (March) or on a telecon.
  4. **Review submission 11-18/202** - Dan HARKINS

* + 1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0202-01-000m-identifying-a-password.docx>
    2. Title: Adding a Password Identifier to SAE
    3. Abstract: This document proposes a way to add a password identifier to SAE allowing for a password to be uniquely identified when an ambiguity exists, for instance when a password is identified by a wildcard peer MAC address.
    4. Review Submission
    5. Discussion:
       1. Is this different from OWE? – yes, it is, OWE is on unauthenticated connection.
       2. This is for use for Identifiers only when it exists.
       3. Concern for what the Identifier can be, if it is a simple identifier, the password is encrypted and not sent in the clear. The Identifier can be simple as it is passed in the clear, so it does not have to be complicated string.
       4. Discussion on possible UI interaction with the change.
       5. Discussion on how the use of Password would be stored/challenged/identified.
    6. Will bring back on Thursday PM1.
  1. **Review 11-18-0227** – Jouni MALINEN
     1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0227-01-000m-ft-protocol-with-fils-akms.docx>
     2. Title: FT protocol with FILS AKMs
     3. Abstract: Contribution 17-906r4 addressed number of issues related to FILS. However, the changes in that document for making FT protocol work with FILS AKMs, i.e., the case of using FILS authentication to derive FT key hierarchy during initial mobility domain association followed by use of FT protocol for subsequent reassociation, were not complete. They did not describe how the AES-SIV output is encoded in the Reassociation Request/Response frame. An attempt to implement this failed and there did not result in any good and clean way of encoding the data without changing the FTE design significantly.

To address this issue, this contribution proposes an alternatively direction for fixing the issue: derive additional keys (KEK2 and KCK2) to allow the previously defined (from P802.11r) protection mechanism in FTE (AES key wrap for protection GTK and IGTK and CMAC to generate the MIC) without ending up with issues of using keys with multiple different cryptographic operations.

As part of preparing this contribution, a separate item in use of the new Suite B AKM for FT was noticed to not be complete (FTE MIC subfield was not made variable length). That issue is also fixed here since the same change is needed with the one of the FILS+FT AKMs.

Revision history:

r1: - add a paragraph break in FTE definition to make it clearer that the length of the MIC field is independent of Element Count

* remove forgotten and unneeded baseline context before 9.4.2.48
  + 1. Review Submission
    2. Discussion on the lifetime of the keys.
    3. Discussion on the reassociation case and the lifetime of the PTK.
    4. This is a modification of text that was modified by CID #114 and #102, doc 11-17/906r4 should be applied first and then apply the changes from 18/227r1.
    5. Updated Resolutions for CID #114 and CID #102 should be mailed to the chair for processing on Thursday PM1.
  1. **Review agenda for Wednesday PM2**.
  2. **Recess 3:28pm**

1. **Wednesday PM2: TGmd meeting in Irvine, CA 16:00-18:00 ET – 2018-01-17**
   1. **Called to order** at 4:01pm by the chair, Dorothy STANLEY (HPE)
   2. **Review Patent Policy**
      1. No items noted
   3. **Review agenda:** 11-17/1871r7
      1. <https://mentor.ieee.org/802.11/dcn/17/11-17-1871-07-000m-january-2018-tgmd-agenda.pptx>
      2. Wednesday PM2

* GEN CIDs: 140, 195, 196
* 11-18-171 CID 5, 7 – Chris HANSEN
* PHY CIDs: 75, 360, 361, 289, 177
* MAC CIDs 339, 290
  + 1. Request for adding 11-18/203 to the agenda
    2. Request to move CID 290 (MAC) to Thursday
    3. Question on CID 148 – a resolution has been accepted, but we could review today.
  1. **CID 140 (GEN)**
     1. Put in Email from Jon ROSDAHL
     2. Review context of the proposed changes.
     3. P2781.24 – 18.3.4 CCA – discussion on if it should be at the connector or not.
     4. Better to accept the proposal and then we can adjust afterward if necessary.
     5. Proposed Resolution: REVISED (GEN: 2018-01-18 00:11:59Z) - (D0.5 pages) Change "at the antenna" to "at the antenna connector" for the following locations:
* P984 L17 (in Table 9-119)
* P2138 L26 (11.11.12)
* P2677 L4 (15.2.3.3)
* P2696 L60 (15.4.6.3)
* P2727 L5 (16.3.8.2)
* P2727 L45 (16.3.8.5)
* P2733 L34 (17.2.3.3)
* P2765 L26 (17.3.10.5)
* P2781 L24 (18.3.4)
* P2791 L58 (Table 19-1)
* P2965 L49 (Table 21-1)
* P3098 L13 (Table 22-1)
* P3157 L12 (Table 23-1)
* P3157 L20 (Table 23-1)
* P3157 L26 (Table 23-1)
* P3614 L3 (dot11WirelessMGTEventPeerSTATxPower MIB)
* P3750 L8 (dot11WNMEventPeerRprtStaTxPower MIB)
* Also change:
* P4027L17 change "at the antenna input" to "at the antenna connector" (Table D-3)
  + 1. No Objection to add the changes as noted.
  1. **CID 195 and 196 (GEN)**
     1. Discussed Graham SMITH’s email from 12-7-2017
     + As discussed, ANTENNA ID and TX\_ANTENNA or RX\_ANTENNA are NOT THE SAME.
     + Possible changes: The values for RX-ANTENNA and TX\_ANTENNA should be changed to 0 – 255. (Reason is that I can see the value 0 in the pcaps I looked at, so 0 must be possible and used).
     + At 2419.61 “ANT\_STATE” should be replaced with “RX\_ANTENNA” (Reason is that it is defined exactly the same as RX\_ANTENNA)
     + At 2425.22 “ANT\_STATE” should be replaced with “RX\_ANTENNA”
     + Note, Leave ANT\_STATE in 2441.59 as this is different (OFDM)
     1. ACTION ITEM #I4: Jon ROSDAHL to prepare a complete resolution proposal for consideration on Thursday and a rejection if the proposal is not acceptable.
  2. **Review submission 11-18/0205r1 and 11-18/0171r1** Chris HANSEN
     1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0205-01-000m-motivation-for-vendor-specific-request.pptx>
     2. Title: Motivation for Vendor Specific Request Element
     3. Abstract: Use case example for the Vendor Specific Request Element
     4. Review submission
     5. Presentation of the Use Case lead to no questions.
     6. <https://mentor.ieee.org/802.11/dcn/18/11-18-0171-01-000m-vendor-specific-request.docx>
     7. Title: Vendor Specific Request Element
     8. Abstract: Draft text changes to incorporate a Vendor Specific Request Element in 802.11md are described here.
     9. Review submission – highlighting changes from yesterday.
     10. CIDs 5 and 7
     11. Table 9-77, there was a column missing in the submission (Fragmentable).
         1. An update to the submission would need to be done.
         2. The Extensible field should be “no” rather than “yes”.
         3. The Fragmentable field could be debatable (yes/no).
     12. Need to allow for getting either all the vendor’s specific data, but not the specific info.
     13. The requirement is that we need to have the full OI/OUI and then allow for the Vendor specific subfield to be allowed. See 9.4.2.26 as an example.
     14. Why can the Vendor Specific Element 9.4.1.32 not just used? There is a need to have a request for the info that could be put in this element.
     15. The OI and OUI are defined by the IEEE, not the vendor. They have to request the id from the IEEE.
     16. More discussion on the use of OUI and OI.
     17. Not ready for now. – will review tomorrow and if the submission is not accepted, then we will reject the CIDs 5 and 7.
  3. **Review 17/1089r11** Mike MONTEMURRO
     1. <https://mentor.ieee.org/802.11/dcn/17/11-17-1089-11-000m-revmd-cc25-comment-resolutions.doc>
     2. CID 75 (PHY)
        1. Review comment
        2. Review discussion
        3. Proposed Resolution: Revised. Replace

“If at least 95% of the sum of the energy from all impulse responses of the time domain channels between all

space-time streams and all transmit chain inputs, induced by the CSD added according to Table 19-10

(Cyclic shift values of HT portion of packet) and the frequency-dependence in the matrix, is contained

within 800 ns, the smoothing bit should be set to 1. Otherwise, it shall be set to 0.”

with

“When a Beamforming steering matrix is applied, the smoothing bit should be set to 1. It may be set to 0 otherwise.”

* + - 1. No Objection Mark Ready for Motion
    1. CID 361 (PHY)
       1. Review Comment
       2. Proposed resolution: Incorporate the changes in for CID 361 in doc 11-17/1089r12: <https://mentor.ieee.org/802.11/dcn/17/11-17-1089-12-000m-revmd-cc25-comment-resolutions.doc>
       3. No objection Mark Ready for Motion
    2. CID 360(PHY)
       1. Review Comment
       2. Review context of the proposed change.
       3. Proposed Resolution: Revised.

At 829.27, 830.7, 1167.7 – Change “PPDU Bandwidth” to “VHT PPDU” (column header)

AT 830.33, 1167.52 – Change “HT PPDUs (at 20 or 40 MHz PPDU bandwidth).” To “20MHz or 40 MHz HT PPDU”

At 3802.4 – Change

“If multiple PPDU bandwidths are available, the N\_SD of the widest possible PPDU bandwidth allowed between the two STAs based on capabilities is assumed.”

To

“If multiple channel bandwidths are available, the N\_SD of the widest possible TXVECTOR CH\_BANDWIDTH allowed between the two STAs based on capabilities is assumed.”

* + - 1. No Objection – Mark Ready for Motion
    1. CID 289 (PHY)
       1. Review Comment
       2. Proposed Resolution: Revised. dot11MCCAMinTrackStates has been removed by CID 110, which incorporates the changes in 11-17/1447r0: <https://mentor.ieee.org/802.11/dcn/17/11-17-1447-00-000m-mesh-mcca-mob-correction.docx>
       3. No Objection – Mark Ready for Motion
  1. **Review submission 11-18/237** - Sigurd SCHELSTRAETE (Quantenna)
     1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0237-00-000m-cid-177.docx>
     2. Title: CID 177
     3. Abstract: This submission provides discussion and proposed resolution for CID 177
     4. While Sigurd is not here, Mike MONTEMURRO will present the submission.
     5. CID 177:
        1. Review comment
        2. Review discussion in the submission
        3. Proposed Resolution: Reject, A value for aPHYHeaderLength is given for HT and VHT in Table 19-25 and Table 21-29 respectively. While this does not provide a “definition of PHY header” as suggested by the commenter, only the numerical value is needed for interpreting the spec and those values are provided by the current text.
  2. Review PHY CIDs remaining Plan
     1. CIDs that require a submission to be marked: REJECTED - The comment fails to identify changes in sufficient detail so that the specific wording of the changes that will satisfy the commenter can be determined.
     2. About 34 CIDs
  3. **Review doc 11-17/1078r5** – Ganesh
     1. <https://mentor.ieee.org/802.11/dcn/17/11-17-1078-05-000m-resolutions-to-cids-148-and-339.docx>
     2. Title: [Resolutions to CID #148 and 339 (relative to IEEE 802.11 REVmd D0.4)
     3. Abstract: This submission proposes resolutions to CIDs 148 and 339.
     4. CID 148 (MAC)
        1. Review Comment
        2. Review discussion
        3. Review proposed changes.
        4. Proposed resolution: Revise, Incorporate the changes in 11-17/1078r5 <<https://mentor.ieee.org/802.11/dcn/17/11-17-1078-05-000m-resolutions-to-cids-148-and-339.docx> > for CID 148.
        5. This updated the prior resolution – The prior Resolution identified two changes, the first change is retained, but the second change is modified.
        6. No objection – Mark Ready for Motion
        7. This CID is owned by the Editor, so a new Motion will need to be made and then the Editor will update the comment database with the new Resolution and the note to the editor.
     5. CID 339 (MAC)
        1. Review Comment
        2. Review Discussion
        3. Rather than fix the equation, just refer to the IEEE 802.1AS REV D6.0.
        4. The IEEE 802.1AS publication date would become a gating item for publication of REVmd.
        5. IEEE 802.1AS is just starting Sponsor Ballot, but we would need to decide how the reference the appropriate standard, but we do not want to reference the draft.
        6. The deletion of the equation was questioned. R4 still had the corrected equation.
        7. Moved to 11-17/1078r4:
        8. <https://mentor.ieee.org/802.11/dcn/17/11-17-1078-04-000m-resolutions-to-cids-148-and-339.doc>
        9. Review the equation shown in R4.
        10. Review the figures that were referenced.
        11. The equation should match the deployments rather than causing existing deployments non-compliant.
        12. Proposed Resolution: CID 339 (MAC): REJECTED (MAC: 2018-01-18 01:39:16Z): The task group considered the comment, see 11-17/1078r5: <<https://mentor.ieee.org/802.11/dcn/17/11-17-1078-05-000m-resolutions-to-cids-148-and-339.docx>>. There are additional issues, to be consistent with 802.1ASRev. The group could not come to a consensus on a change to this equation.
        13. No Objection – Mark Ready for Motion
  4. **Review document 11-18/203r2** - Gabor BAJKO
     1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0203-02-000m-csa-enhancement.docx>
     2. Updated to account for the feedback.
     3. Review the changes made.
     4. No objection to the document.
     5. A Motion will be made to adopt on Thursday.
  5. **Review document 11-18/0202r2** – Dan HARKINS
     1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0202-02-000m-identifying-a-password.docx>
     2. After the discussion, an update to document was made and the changes reviewed.
     3. Addition of BadId discussed and if it should be BadID or not.
     4. Discussion on Del event. This is part of the SAE state machine.
     5. Review the Editor Comment instructions. Need to have assistance to the change of the figure.
     6. Discussion on the format of the password representation. (ASCII vs UTF-8)
     7. 12.4.3 shows the password representation.
     8. Discussion on if the Identifier could be UTF-8 independent of the password being in ASCII.
  6. Review plan for Thursday.
  7. Recess at 6:00pm

1. **Thursday PM1: TGmd meeting in Irvine, CA 13:30-15:30 ET – 2018-01-18**
   1. **Called to order** at 1:30pm by the chair, Dorothy STANLEY (HPE)
   2. **Review Patent Policy**
      1. No items noted
   3. **Review agenda:** 11-17/1871r8
      1. <https://mentor.ieee.org/802.11/dcn/17/11-17-1871-08-000m-january-2018-tgmd-agenda.pptx>
      2. Thursday PM1

* Comment resolution-CID 290 (MAC), 195, 196 (GEN), ESP CIDs, 5, 7(PHY)
* Motions
* Plans for Jan 2018 – March 2018
* Adjourn
  + 1. Review the total number of CIDs left – add to agenda
    2. No objection to the additions to the agenda – see R9
  1. **MAC CIDs**
     1. <https://mentor.ieee.org/802.11/dcn/17/11-17-0927-14-000m-revmd-mac-comments.xls>
     2. CID 290 (MAC)
        1. Review comment
        2. Previously discussed in Sept.
        3. The thought is that “upper limit” is not what this variable is, but rather the current (operating) limit.
        4. Proposed Resolution:
        5. Mark Ready for Motion
  2. GEN CIDs
     1. CID 195 and 196 (GEN)
     2. From Email sent to reflector:

Greetings,

    CID 195 and 196 address a concern where a parameter to hold an antenna ID should have a valid range of 1-254.

   Antenna ID is defined in 9.4.2.40 (Antenna element).

   Variables that hold an specific valid Antenna ID include TX\_ANTENNA (specific for transmit), RX\_ANTENNA (specific ID for receiving antenna), dot11CurrentTXAntenna (specific ID for transmitting), dot11CurrentRxAntenna (specific ID for receiving antenna), dot11AntennaListIndex (specifies a valid antenna ID). These variables do not provide for the value of "0 = unknown" or for "255 = Multiple Antenna".

The CIDs and the proposed resolutions are noted below.

CID 195

Comment: The antenna ID in the Antenna element is only allowed to be from 1 to 254 (0 and 255 have special meanings)

Proposed Change: Change 256 to 254 in Table 16-1, 15.2.2.7 and Table 16-2; change 255 to 254 in C.3 for dot11CurrentTxAntenna, dot11CurrentRxAntenna and dot11AntennaListIndex

Proposed Resolution: REVISED (GEN: 2018-01-18 08:42:37Z)  
at P2675.56 in Table 15-1 - Change 256 to 254 (range for TX\_ANTENNA).  
at P2676.20 in Table 15-2 - Change 256 to 254 (range for TXVECTOR TX\_ANTENNA).  
at P2676.49 in Table 15-2 - Change 256 to 254 (range for RX\_ANTENNA).  
  
at P3875.2   Change 255 to 254 (range for dot11CurrentTxAntenna).  
at P3875.37 Change 255 to 254 (range for dot11CurrentRxAntenna).  
at P3883.61 Change 255 to 254 (range for dot11AntennaListIndex)  
This corrects the range for antenna ID.

CID 196

Comment:  The antenna ID in the Antenna element is only allowed to be from 1 to 254 (0 (unknown) and 255 (multiple) have special meanings, but maybe they're allowed on receive)

Proposed Change:  In Table 16-5 change 1-256 to 1-254.  In Table 17-2 change 0-255 for ANT\_STATE to 1-254

Proposed Resolution:

REVISED (GEN: 2018-01-18 07:56:47Z)   
In Table 16-5 Change at P2716.22 "ANT\_STATE" to "RX\_ANTENNA".  
In Table 16-5 Change at P2716.22 "1-256" to "1-254"  
In Table 16-5 Change at P2716.25 "1 to 256" to "1 to 254"  
In Table 17-2 Change at P2732.59 "ANT\_STATE" to "RX\_ANTENNA"  
In Table 17-2 Change at P2732.59 "0-255" to "1-254"  
Change at P2710.60  "ANT\_STATE (the antenna used for receive)," to "RX\_ANTENNA"  
  
This corrects the range for use of antenna ID.

There are only 3 instances of ANT\_STATE which is referenced as the receive antenna information, so the change to RX\_ANTENNA is consistent.

A Motion will be prepared to accept the proposed resolutions for CID 195 and CID 196 made on Thursday PM1 slot.

* + 1. Discussion on what the values should be for each line:
       1. Changes highlighted in Yellow
          1. Change: at P2675.56 in Table 15-1 - Change 256 to 255 (range for TX\_ANTENNA).
          2. Change: at P2676.20 ~~in Table 15-2~~ - Change 256 to 255 (range for TXVECTOR TX\_ANTENNA).
          3. Change: at P2676.49 in Table 15-2 - Change 1-256 to 0-255 (range for RX\_ANTENNA).
          4. Change ~~at P3875.2   Change 255 to 254 (range for dot11CurrentTxAntenna).~~
          5. Change at P3875.37 Change ~~255 to 254~~ 1-255 to 0-255(range for dot11CurrentRxAntenna).
          6. No Change for “at P3883.61 Change 255 to 254 (range for dot11AntennaListIndex)”
    2. Proposed Resolution: CID 195 (GEN) REVISED (GEN: 2018-01-18 08:42:37Z)

at P2675.56 in Table 15-1 - Change 256 to 255 (range for TX\_ANTENNA).

at P2676.20 Change 256 to 255 (range for TXVECTOR TX\_ANTENNA).

at P2676.49 in Table 15-2 - Change 1-256 to 0-255 (range for RX\_ANTENNA).

at P3875.2 No Change for dot11CurrentTxAntenna.

at P3875.37 Change 1-255 to 0-255 (range for dot11CurrentRxAntenna).

at P3883.61 Change 255 to 254 (range for dot11AntennaListIndex).

This corrects the range for TX\_ANTENNA, RX\_ANTENNA, dot11CurrentRxAntenna and dot11AntennaListIndex.

* + 1. CID 196 (GEN)
       1. Changes to email proposal are marked in yellow
          1. Change “In Table 16-5 Change at P2716.22 "1-256" to "0-255"”
          2. Change “In Table 16-5 Change at P2716.25 "1 to 256" to "1 to 255"
          3. Delete “~~In Table 17-2 Change at P2732.59 "0-255" to "1-254"”~~
       2. No objection- Mark ready for Motion
       3. Proposed Resolution: CID 196: REVISED (GEN: 2018-01-18 07:56:47Z)
* In Table 16-5 Change at P2716.22 "ANT\_STATE" to "RX\_ANTENNA".
* In Table 16-5 Change at P2716.22 "1-256" to "1-254"
* In Table 16-5 Change at P2716.25 "1 to 256" to "1 to 255"
* In Table 17-2 Change at P2732.59 "ANT\_STATE" to "RX\_ANTENNA"
* Change at P2710.60 “ANT\_STATE (the antenna used for receive)," to "RX\_ANTENNA,"
* This corrects the range for use of RX\_ANTENNA and TX\_ANTENNA.
* There are only 3 instances of ANT\_STATE which is referenced as the receive antenna information, so the change to RX\_ANTENNA is consistent.
  + - 1. No Objection Mark Ready for Motion
  1. **Review doc 11-17/1871r18** Matthew Fisher
     1. <https://mentor.ieee.org/802.11/dcn/17/11-17-1192-18-000m-cr-esp.docx>
     2. <https://mentor.ieee.org/802.11/dcn/17/11-17-1192-19-000m-cr-esp.docx>
     3. ESP CIDs 259, 251, 217, 216, 215, 214, 213, 212, 56, 55, 54, 31, 30 (MAC): 11-17/1192r18
        1. Matthew FISCHER presented this revision of the proposed changes.
        2. Listed changes since this was last reviewed by the TG (which was ~ r12).
           1. R13 and r14 were minor editorial type changes.
           2. R15 added explanation to comment resolutions that didn’t already have one. Added a new MIB attribute for enablement/support of the Outbound direction.
           3. R16 added more clarification about assumptions that are used to compute air time fraction values. Added “optionally” to the inclusion of the Outbound element based on the MIB attribute being set.
           4. Noticed that one place missed adding “Outbound” to the name of the MIB attribute, in Beacon frames. Corrected, and posted an r19.
        3. R17 changed the assumptions mentioned above to be “should” instead of “are”.
        4. R18 changed the assumptions to be explicit about
     4. Discussion:
        1. Do we have a definition of “Single User PPDU” in the context of the current baseline (prior to 11ax inclusion)? A: Yes, there are existing uses.
        2. Why do we need the “Outbound Air Time Information field format”? Can’t we directly say Outboard Air Time List field contains 0 to 4 Estimated Outbound Air Time Fraction? We could, perhaps, but this is not incorrect as is.
     5. **Motion #37 – ESP CIDs**
        1. Resolve CIDs 259, 251, 217, 216, 215, 214, 213, 212, 56, 55, 54, 31, 30 as indicated in 11-17/1192r19: <<https://mentor.ieee.org/802.11/dcn/17/11-17-1192-19-000m-cr-esp.docx>>
        2. Moved: Matthew FISCHER Seconded: Mike MONTEMURRO
        3. Discussion:
           1. Don’t think this this really addresses the concerns in the comments. It still is not clear how to get this parameter/element correct, or how to use it.
           2. Others felt these improvements were good, and sufficient.
        4. **Result of Motion #37: Yes: 7 No: 5 Abstain: 8. Motion FAILS.**
     6. **Motion #38 – ESP CIDs**
        1. Resolve CIDs 259, 251, 217, 216, 215, 214, 213, 212, 56, 55, 54, 31, 30 as “Rejected”, the TG considered document 11-17/1192r19: <<https://mentor.ieee.org/802.11/dcn/17/11-17-1192-19-000m-cr-esp.docx>> to address the comments and did not come to a consensus to adopt the proposed changes.
        2. Moved: Robert STACEY Seconded: Stephen MCCANN
        3. No discussion
        4. **Result of Motion #38: Yes: 9 No: 2 Abstain: 7. Motion PASSES.**
  2. **Review Document 11-17/171r2** Chris HANSEN
     1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0171-02-000m-vendor-specific-request.docx>
     2. Reviewed the changes from yesterday
     3. These changes are relative to Draft 0.5
     4. **Motion #39 Vendor Specific Request**
        1. Resolve CIDs 5 and 7 as “Revised”, “Incorporate the text changes in <https://mentor.ieee.org/802.11/dcn/18/11-18-0171-02-000m-vendor-specific-request.docx>. These changes (relative to D0.5) introduce a new vendor Specific request element.
        2. Moved Chris HANSEN 2nd: Jouni MALINEN
        3. **Results of Motion #39**: Unanimous consent
  3. **Motion #40 CSA with channel switch time announcement**
     1. Incorporate the text changes indicated in <https://mentor.ieee.org/802.11/dcn/18/11-18-0203-02-000m-csa-enhancement.docx> into the TGmd draft.
     2. Moved: Stephen MCCANN, 2nd: Chao Chun WANG
     3. **Results: Motion #40**: Approved by Unanimous consent
  4. **Review doc 11-18-0202r3** – Dan HARKINS
     1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0202-03-000m-identifying-a-password.docx>
     2. Changes include changing “BadId to BadID and making the field UTF-8.
     3. **Motion #41 SAE Password Identifier**
        1. Incorporate the text changes indicated in 11-18/202r3: <<https://mentor.ieee.org/802.11/dcn/18/11-18-0202-03-000m-identifying-a-password.docx>> into the TGmd draft.
        2. Moved Jouni MALINEN 2nd Mike MONTEMURRO
        3. **Results of Motion #41**: Unanimous consent
  5. **Motion #42 CID 102 FILS/FT fixes**
     1. Resolve CID 102 as “REVISED” with a resolution of

Incorporate the text changes in 11-17/906r4 <https://mentor.ieee.org/802.11/dcn/17/11-17-0906-04-000m-fils-fixes.docx> except for changes to 9.4.2.171.2 and incorporate the changes in 11-18/227r1 <https://mentor.ieee.org/802.11/dcn/18/11-18-0227-01-000m-ft-protocol-with-fils-akms.docx> . These changes resolve the comment in the direction suggested by the commenter.

Note to the editor: Changes from 11-17/906r4 were already included in REVmd/D0.5 (identified as being implemented for CID 114) and 11-18/227r1 shows changes on top of REVmd/D0.5 and it partially reverts some of the changes from 11-17/906r4.

* + 1. Moved Jouni MALINEN, 2nd Mike MONTEMURRO
    2. Discussion:
       1. this only mentions 114. The other two CIDs 232 and 114 do not need to be changed, only 102
    3. **Results of Motion #42**: 6-0-9 Motion Passes.
  1. **Motion #43 - CID 148**
     1. Resolve CID 148 as Revised, “Incorporate the changes in 11-17/1078r5 <<https://mentor.ieee.org/802.11/dcn/17/11-17-1078-05-000m-resolutions-to-cids-148-and-339.docx> > for CID 148.  
        Note to editor: This updated the prior resolution – The prior Resolution identified two changes, the first change is retained, but the second change is modified. “
     2. Moved: Robert STACEY, 2nd: Graham SMITH
     3. Discussion: The discussion yesterday was on two CIDs, but only 148 is being accepted. The changes for CID 339 will not be made and the CID was resolved separately.
     4. **Results for Motion #43**: Motion Passes by Unanimous consent.
  2. **Motion #44 - Irvine CIDs – 2**
     1. Approve the comment resolutions on the

“PHY Motion H” tab in 11-17/930r14: <https://mentor.ieee.org/802.11/dcn/17/11-17-0930-14-000m-revmd-cc25-phy-plus-comments.xls>

“Motion MAC-M” tab in 11-17/0927r14: <https://mentor.ieee.org/802.11/dcn/17/11-17-0927-14-000m-revmd-mac-comments.xls>

“Gen Motion – Jan 2” and “Minor Correction” tabs in 11-17/928r9 <https://mentor.ieee.org/802.11/dcn/17/11-17-0928-09-000m-revmd-cc25-gen-comments.xlsx>

* + 1. Moved: Mike MONTEMURRO 2nd: Graham SMITH
    2. **Results of Motion #44:**  Unanimous Consent – Motion Passes
  1. **Motion #45 - Irvine CIDs – 3**
     1. Approve the comment resolutions on the
     2. “Submission Required” tabs in 11-17/930r14: <https://mentor.ieee.org/802.11/dcn/17/11-17-0930-14-000m-revmd-cc25-phy-plus-comments.xls>
     3. Moved: Mike MONTEMURRO 2nd: Chris HANSEN
     4. Discussion:
        1. Some of the CIDs do have some pointers to submissions, so is the resolution correct? –
        2. the editing instructions in some cases point to REVmc, and not the REVmd, the instructions are not germane to the document under consideration.
     5. **Results: Motion #45**: 8-0-6 Motion Passes
  2. **Motion #46: Irvine CIDs -- 4**
     1. Resolve CIDs 235, 146, 201, 267, 328 as “Rejected”, with a resolution of “The comment fails to identify changes in sufficient detail so that the specific wording of the changes that will satisfy the commenter can be determined.

Resolve CID 265 as “Rejected” with a reason of “The commenter subsequently disagreed with the resolution as proposed and requested more time to develop a resolution.

* + 1. Discussion:
       1. CID 265 gives the proposed change and it was thought to be accepted, but the commenter did not like the end result and was tasked to bring a submission and did not. The resolution should be different from the others.
       2. Moved: Mark HAMILTON 2nd: Mike MONTEMURRO
       3. **Results of Motion #46**: Motion passes by unanimous consent
  1. **CID 134 (PHY)**
     1. Review Comment
     2. Discussion on the potential of interoperability issues.
     3. **Motion #47– Irvine CIDs -- 5**
        1. Resolve CID 134 as “rejected” with a resolution of “The Proposed change introduces backwards compatibility issues”
        2. Moved: Mike MONTEMMURO 2nd: Chris HANSEN
        3. Discussion: Speak against the motion – The fix does seem to help.
        4. **Results of Motion #47**: 6-2-9 Motion Passes
  2. **Motion #48 – Initial WGLB**
     1. Having approved changes to P802.11REVmd D0.5, as defined in 11-17-914r12 <<https://mentor.ieee.org/802.11/dcn/17/11-17-0914-12-000m-revmd-wg-cc-comments.xls>> and 11-17-1871r9 <<https://mentor.ieee.org/802.11/dcn/17/11-17-1871-09-000m-january-2018-tgmd-agenda.pptx>> ,

Instruct the editor to prepare P802.11REVmd D1.0 and

Approve a 40 day Working Group Technical Letter Ballot asking the question

“Should P802.11REVmd D1.0 be forwarded to Sponsor Ballot?”

* + 1. Moved: Jon ROSDAHL, 2nd: Matthew FISCHER
    2. Discussion:
       1. Having a longer time as will be overlapping the Plenary anyway seems prudent.
       2. Discussion on REVmd Letter ballot and how it sets the ballot poll.
    3. **Results of Motion #48: 13-2-0** Motion Passes
  1. **Review Plans going forward for January 2018 – March 2018**
     1. Objectives: WGLB on D1.0, Comment resolution
     2. **Conference calls:**
        1. Fridays - February 16, 23
     3. **April 2018 ad-hoc, 3 days week of April 9th or April 16th**
        1. Looking for a date – week of April 9th was requested**.**
        2. **Motion #I3: April Ad-Hoc**
           1. Approve an TGmd Ad-Hoc meeting during the week of April 9, 2018, anticipated to be held in Fort Lauderdale, Florida/Cambridge/Portland (may change depending on sponsor)
           2. Moved: Graham SMITH 2nd: Stephen MCCANN
           3. **Results of Motion #I3**: 11-0-3 Motion Passes
  2. Thanks to all for the hard work.
  3. **Adjourned 3:30pm PT**.

**References:**

1. Monday 15 January 2018 PM1:

* <https://mentor.ieee.org/802.11/dcn/17/11-17-1871-01-000m-january-2018-tgmd-agenda.pptx>
* <https://mentor.ieee.org/802.11/dcn/17/11-17-1871-02-000m-january-2018-tgmd-agenda.pptx>
* <https://mentor.ieee.org/802.11/dcn/17/11-17-0920-07-000m-802-11revmd-editor-s-report.ppt>
* <https://mentor.ieee.org/802.11/dcn/17/11-17-1738-01-000m-setting-ccf0-for-20-40mhz-bss-bw.docx>
* <https://mentor.ieee.org/802.11/dcn/17/11-17-1089-10-000m-revmd-cc25-comment-resolutions.doc>

1. Monday 15 January 2018 PM2:

* <https://mentor.ieee.org/802.11/dcn/17/11-17-1871-03-000m-january-2018-tgmd-agenda.pptx>
* <https://mentor.ieee.org/802.11/dcn/18/11-18-0203-00-000m-csa-enhancement.docx>
* <https://mentor.ieee.org/802.11/dcn/18/11-18-0171-00-000m-vendor-specific-request.docx>
* <https://mentor.ieee.org/802.11/dcn/17/11-17-1479-02-000m-cca-sensitivity.pptx>

1. Tuesday 16 January 2018 PM1:

* <https://mentor.ieee.org/802.11/dcn/17/11-17-1871-04-000m-january-2018-tgmd-agenda.pptx>
* <https://mentor.ieee.org/802.11/dcn/17/11-17-1518-03-000m-resolution-cids-59-62-remove-dls-stsl.docx>
* <https://mentor.ieee.org/802.11/dcn/17/11-17-1519-04-000m-resolution-cid-65-remove-pcf.docx>
* <https://mentor.ieee.org/802.11/dcn/17/11-17-1137-08-000m-resolutions-for-obsolete-blockack.docx>
* <https://mentor.ieee.org/802.11/dcn/17/11-17-1137-10-000m-resolutions-for-obsolete-blockack.docx>
* <https://mentor.ieee.org/802.11/dcn/17/11-17-1238-02-000m-resolution-for-obsolete-dmg-ofdm.docx>
* <https://mentor.ieee.org/802.11/dcn/17/11-17-1192-14-000m-cr-esp.docx>
* <https://mentor.ieee.org/802.11/dcn/17/11-17-1890-00-000m-comments-on-sae-state-machine.docx>

1. Wednesday 17 January 2018 – PM1:

* <https://mentor.ieee.org/802.11/dcn/17/11-17-1871-06-000m-january-2018-tgmd-agenda.pptx>
* [mentor.ieee.org/802.11/dcn/17/11-17-0930-12-000m-revmd-cc25-phy-plus-comments.xls](https://mentor.ieee.org/802.11/dcn/17/11-17-0930-12-000m-revmd-cc25-phy-plus-comments.xls)
* [mentor.ieee.org/802.11/dcn/17/11-17-0927-13-000m-revmd-mac-comments.xls](https://mentor.ieee.org/802.11/dcn/17/11-17-0927-13-000m-revmd-mac-comments.xls)
* <https://mentor.ieee.org/802.11/dcn/17/11-17-0928-07-000m-revmd-cc25-gen-comments.xlsx>
* [mentor.ieee.org/802.11/dcn/17/11-17-0929-06-000m-revmd-editor2-comments.xlsx](https://mentor.ieee.org/802.11/dcn/17/11-17-0929-06-000m-revmd-editor2-comments.xlsx)
* [mentor.ieee.org/802.11/dcn/17/11-17-1738-01-000m-setting-ccf0-for-20-40mhz-bss-bw.docx](https://mentor.ieee.org/802.11/dcn/17/11-17-1738-01-000m-setting-ccf0-for-20-40mhz-bss-bw.docx)
* [mentor.ieee.org/802.11/dcn/17/11-17-1810-01-000m-20-2-3-phyconfig-vector-parameters.docx](https://mentor.ieee.org/802.11/dcn/17/11-17-1810-01-000m-20-2-3-phyconfig-vector-parameters.docx)
* [mentor.ieee.org/802.11/dcn/17/11-17-1811-00-000m-20-11-golay-sequences.docx](https://mentor.ieee.org/802.11/dcn/17/11-17-1811-00-000m-20-11-golay-sequences.docx)
* [mentor.ieee.org/802.11/dcn/17/11-17-0930-12-000m-revmd-cc25-phy-plus-comments.xls](https://mentor.ieee.org/802.11/dcn/17/11-17-0930-12-000m-revmd-cc25-phy-plus-comments.xls)
* <https://mentor.ieee.org/802.11/dcn/17/11-17-0927-13-000m-revmd-mac-comments.xls>
* <https://mentor.ieee.org/802.11/dcn/17/11-17-0928-07-000m-revmd-cc25-gen-comments.xlsx>
* <https://mentor.ieee.org/802.11/dcn/18/11-18-0203-01-000m-csa-enhancement.docx>
* <https://mentor.ieee.org/802.11/dcn/17/11-17-1890-01-000m-comments-on-sae-state-machine.docx>
* <https://mentor.ieee.org/802.11/dcn/17/11-17-1807-03-000m-defense-against-multi-channel-mitm-attacks-via-operating-channel-validation.docx>
* <https://mentor.ieee.org/802.11/dcn/18/11-18-0202-01-000m-identifying-a-password.docx>
* <https://mentor.ieee.org/802.11/dcn/18/11-18-0227-01-000m-ft-protocol-with-fils-akms.docx>

1. Wednesday 17 January 2018 – PM2:

* <https://mentor.ieee.org/802.11/dcn/17/11-17-1871-07-000m-january-2018-tgmd-agenda.pptx>
* <https://mentor.ieee.org/802.11/dcn/18/11-18-0205-01-000m-motivation-for-vendor-specific-request.pptx>
* <https://mentor.ieee.org/802.11/dcn/18/11-18-0171-01-000m-vendor-specific-request.docx>
* <https://mentor.ieee.org/802.11/dcn/17/11-17-1089-11-000m-revmd-cc25-comment-resolutions.doc>
* <https://mentor.ieee.org/802.11/dcn/17/11-17-1089-12-000m-revmd-cc25-comment-resolutions.doc>
* <https://mentor.ieee.org/802.11/dcn/17/11-17-1447-00-000m-mesh-mcca-mob-correction.docx>
* <https://mentor.ieee.org/802.11/dcn/17/11-17-1078-05-000m-resolutions-to-cids-148-and-339.docx>
* <https://mentor.ieee.org/802.11/dcn/17/11-17-1078-04-000m-resolutions-to-cids-148-and-339.doc>
* <https://mentor.ieee.org/802.11/dcn/18/11-18-0203-02-000m-csa-enhancement.docx>
* <https://mentor.ieee.org/802.11/dcn/18/11-18-0202-02-000m-identifying-a-password.docx>

1. Thursday 17 January 2018 PM1:

* <https://mentor.ieee.org/802.11/dcn/17/11-17-1871-08-000m-january-2018-tgmd-agenda.pptx>
* <https://mentor.ieee.org/802.11/dcn/17/11-17-1871-09-000m-january-2018-tgmd-agenda.pptx>
* <https://mentor.ieee.org/802.11/dcn/17/11-17-0927-14-000m-revmd-mac-comments.xls>
* <https://mentor.ieee.org/802.11/dcn/17/11-17-1192-18-000m-cr-esp.docx>
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* <https://mentor.ieee.org/802.11/dcn/18/11-18-0171-02-000m-vendor-specific-request.docx>
* <https://mentor.ieee.org/802.11/dcn/18/11-18-0203-02-000m-csa-enhancement.docx>
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