IEEE P802.11  
Wireless LANs

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| REVmc Minutes for March 2014 – Beijing, China | | | | |
| Date: 2014-03-21 | | | | |
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Abstract

Minutes for the 802.11 REVmc Task Group for the March 2014 802 Plenary

1.0 TGm REVmc Meeting in Beijing – Called to order by Dorothy STANLEY 1:34pm

* 1. Review Agenda:

1. Chair’s Welcome, Status, Review of Objectives, Approve agenda, minutes
2. Editor’s Report
3. Timeline and Schedule
4. Comment resolution – 11ad 2199, 2110 (11-14-0268, 406) Carlos CORDEIRO,

2436 (11-14-41r1), CID 2065, 11-14-57, 207, - Adrian STEPHENS

* 1. No changes to the Agenda – approved without objection
  2. Patent Policy Reviewed
     1. Policies and Procedures, Attendance reminder
     2. \*\*IEEE Patent Policy <http://standards.ieee.org/board/pat/pat-slideset.ppt>
     3. No issues identified
  3. **Approve prior meeting minutes**
     1. <https://mentor.ieee.org/802.11/dcn/14/11-14-0129-00-000m-revmc-minutes-for-jan-2014-la.docx>
     2. <https://mentor.ieee.org/802.11/dcn/14/11-14-0226-03-000m-tgmc-feb-2014-telecon-minutes.docx>
     3. Approval of Minutes done without objection
  4. **Editor’s Report (Adrian STEPHENS) 11-13/95r9**
     1. Editor has speculatively prepared a D2.6, containing edits for “ready for motion” comments matching the database state as of 2014-03-13.
     2. Editor invites discussion as to whether we should try and review this and release D2.6 during this week.
     3. Draft: P802.11REVmc D2.5 (currently in members’ area)
        1. WG Ballot composite comments: 11-13/0233
           1. LB193 comments start at CID 1000
           2. LB199 comments start at CID 2000
           3. Includes pre-ballot comments
        2. MAC comment resolutions: 11-13/0361
        3. GEN comment resolutions: 11-13/1160
        4. MAC/GEN sheets usually used for motioning tech resolutions.
           1. Composite SS may lag contents of these sheets during a session, but is the eventual resting place of approved resolutions.
     4. We will need to confirm the comment database prior to the Thurs PM1 meeting.
  5. Comment Resolution:
     1. **Review document 11-14/268r0 Carlos CORDEIRO**
        1. CID 2199 MAC
           1. Review comment
           2. Preference to resolution #1 – see doc 11-14/030r2
           3. Question on if “IEEE Std.802.11 authentication” or should is it ok to be “802.11 authentication”
           4. State diagram would be better having
           5. Review of 10.3.4.1 – DMG STA use of authentication.
           6. Does a DMG STA not do authentication or it does depending on the use of Open System Station.
           7. Drop the “in a DMG case” to just call out a “A DMG STA”...
           8. The discussion was about if the “Shall” Statements are specific to PBSS or IBSS etc.
           9. The concern was with when the Authentication is required to be done.
           10. RSNA is the key that is needed
           11. More time is going to be needed. Carlos is needed more feedback directly given to him to make changes.
     2. **Review Document 11-14/406r0 (Carlos CORDEIRO)**
        1. Proposed change reviewed.
           1. RXSS length issue
           2. Proposed change to P1012L24-28

The RXSS Length field is valid only when transmitted in a CBAP and is reserved otherwise. The RXSS Length field specifies the length of a receive sector sweep as required by the transmitting STA, and is defined in units of a SSW frame. ~~The value of this field is in the range of 0 to 62, with odd values being reservedThe~~ length of the sector sweep, ~~including any LBIFS if necessary for DMG antenna switching~~, is given by (RXSS Length+1)\*2.

* + - * 1. RXSS Transmitting Antennas in ISS vs RSS issue:
        2. Proposed *Change P1416L47-51 as follows:*

During the responder RXSS, the responder shall transmit the number of SSW frames indicated by the

initiator in the initiator’s most recently transmitted RXSS Length field (non-A-BFT) or FSS field (A-BFT)

from the DMG antenna and sector that were selected during the preceding TXSS with the initiator ~~each of the responder’s DMG antennas, each time with the same antenna sector or pattern fixed for all~~ ~~SSW frames transmission originating from the same DMG antenna~~. The responder shall set the Sector ID

* + - * 1. The CID 2110 resolution will get this change incorporated.
      1. CID 2110 MAC
         1. Review changes suggested
         2. Discussion on the value of changing a magic number defined in place, but need a better way to define the value.
         3. Proposed changes in the doc: Revise *Insert the following new parameter in Table 10-24 in subclause 10.39* aMinPPDUDurationForDMGMeasurement; 5.27 µs

*Replace all instances of “*5.27 µs*” in section 9.38.3 by “*aMinPPDUDurationForDMGMeasurement*”*

* + - * 1. **Proposed resolution**: Revised Incorporate all the changes described in 11-14/406r1, including the changes listed above CID 2110"
        2. No objection to have the changes made to be incorporated with the approval of this CID.
        3. Mark ready for motion
    1. **Review Doc 11-14/0041r1**
       1. CID 2436 was approved, but missed being included in the motion tabs, but we need to ensure we are still ok with the proposed changes.
       2. The changes suggested in the CID notes are noting specific parts of this document not all of it...we may have a bit more work to determine what was agreed to and what was not.
       3. Concern is that the list of changes in the AdHoc Notes for 2436 seems to be broader than what is in the document.
       4. 8.4.2.47 checked – the R1 removed the “bit stream” from r0.
       5. Can we just mark this CID to make all changes and be happy with it?
       6. Review each of the changes to ensure we are comfortable with the changes.
          1. 8.6.8.24 change has been done already in D2.5
          2. 11.6.1.3 has the change D2.5
          3. 11.6.1.6 does not
          4. 11.10.1 has the change in D2.5
          5. 13.5.7 has the change in D2.5
       7. Proposed Resolution: Revised- Incorporate the changes in 11-14/40r1 for text changes in 8.2.2; 11.6.1.3; and 11.6.1.6.
       8. No objection mark ready for motion
    2. CID 2065 – MAC
       1. Produced a resolution, but did not get put into a motion for acceptation.
       2. Proposed Resolution: Replace the text at 1197L5-12 with the text in 1200L17-30, delete the cited section 9.22.7.2.2 and revert 11ad changes to headings.
       3. No Objection Mark ready for motion
    3. **Review document 11-14/57r5 – Adrian STEPHENS**
       1. Review the document.
       2. CID 2129 is the subject of this document. Probe Response text
       3. Concern with the double negative on the logic for when it could be sent.
       4. It seemed more complicated when negative form before.
       5. The idea of putting in the text is an improvement, so let the change be made and then with the uniform we can look at the final change to address the content of the process that is now more transparent.
       6. Proposed Resolution: Revised – Incorporate the changes described in 11-14/57r5 for CID 2129.
       7. No objection. Mark ready for motion
    4. **Review Document 11-207r3 Adrian STEPHENS**
       1. CID 2259 GEN
          1. Review comment
          2. Proposed Resolution: Revised: Replace the cited Sentence with: “The AP of a QoS BSS might allow non-QoS STAs to associate.”
       2. CID 2287 GEN
          1. Review comment
          2. Proposed Resolution: Revised. Change “may” to “might” at cited location, and change “at one time” to “at the same time”.
          3. No objection, mark ready for motion
  1. Recess at 3:33pm

1. TGm REVmc Meeting Tuesday 2014-03-19 – Called to order by Dorothy STANLEY at 2:09pm
   1. Review agenda
      1. Motions – telecons
      2. Comment resolution – CID 2043 (Qi WANG), 11-14-207, 275, 344
   2. **MOTION: #48 Telecons**
      1. Approve resolutions to comments in <https://mentor.ieee.org/802.11/dcn/13/11-13-0361-25-000m-revmc-mac-comments.xls> Tab “Motion MAC-U” <https://mentor.ieee.org/802.11/dcn/13/11-13-1160-08-000m-lb199-gen-adhoc-comments.xls> Tabs “Gen Motion Telecon Feb ”, “Gen Motion Telecon Feb 28 ”, and “Gen Motion Telecon March 12 ”

And in doc 11-13/233r27: CIDs 2476, 2044

* + - 1. Moved Adrian STEPHENS, 2nd Jon ROSDAHL
      2. Results 9-0-0; motion passes
  1. Comment resolution:
     1. CID 2043 MAC
        1. Review Comment
        2. REVISED (MAC: 2014-03-18 08:35:24Z): Change “The number of the TFS Response elements in a TFS Response frame is the same as the number of the TFS Request elements in the corresponding TFS Request frame, where the TFS Response elements appear in the same order as the corresponding TFS Request elements in the corresponding TFS Request frame."

to

“The number of the TFS Response elements in a TFS Response frame is the same as the number of the TFS Request elements in the TFS Request frame with the same dialog token, where the TFS Response elements appear in the same order as the corresponding TFS Request elements in the TFS Request frame with the same dialog token."

* + - 1. No objection mark ready for motion
    1. **Review doc 11-14/344r0 Dorothy STANLEY**
       1. CID 2228 GEN
          1. Review comment
          2. Make changes – will need to be doc 11-14/344r1
          3. Add a “the” and change “equal to” to “is”
          4. Proposed resolution Revised; At lines 22, and 30, insert “the” before “delivery method” and change “equal to” to “is

At line 26 insert “the”.

* + - * 1. No objection mark ready for motion
      1. CID 2280
         1. Review comment
         2. Discussion on article insertion and plurality.
         3. Proposed resolution: Incorporate changes as noted in doc 11-14/344r1 for cid 2280
         4. No objection mark ready for motion.
      2. CID 2262
         1. Review comment
         2. Proposed Resolution: ACCEPTED (GEN: 2014-03-18 08:50:58Z)
         3. No objection – mark ready for motion
      3. CID 2266
         1. Review comment
         2. Proposed Resolution: ACCEPTED (GEN: 2014-03-18 08:51:59Z)
         3. No objection – mark ready for motion
      4. CID 2267
         1. Review Comment
         2. Discussion on use of Normative verb in introduction.
         3. Proposed Resolution: ACCEPTED (GEN: 2014-03-18 08:52:34Z)
         4. No objection- mark ready for motion.
      5. CID 2230 GEN
         1. Review Comment
         2. It would be accept except that sub-layers needed to be singular.
         3. Discussion was on clustering…
         4. Proposed resolution: Incorporate changes as noted in doc 11-14/344r1 for cid 2230
         5. No objection mark ready for motion
      6. CID 2245
         1. Review Comment
         2. Proposed Resolution: Revised; Change from “may” to “can” (2 occurrences)
         3. No objection – mark ready for motion.
      7. CID 2261
         1. Review Comment
         2. Proposed Resolution: Accept
         3. No objection – mark ready for motion.
      8. CID 2274
         1. Review comment.
         2. Proposed Resolution: Accept
         3. No objection – mark ready for motion
      9. CID 2286
         1. Review comment.
         2. Proposed Resolution: Accept
         3. No objection – mark ready for motion
      10. CID 2289
          1. Review comment
          2. Proposed Resolution; REVISED (GEN: 2014-03-18 09:05:14Z); Change from “may disassociate” to “can disassociate”
          3. No objection – mark ready for motion
      11. CID 2291
          1. Review comment
          2. Not all DMG stations do this, so not all stations do this.
          3. This helped us think that an earlier CID should have used a “might” instead of “can”. (see CID 2245 and adjust)
          4. Proposed Resolution: Revised – Change from “may be used” to “might be used”
          5. No objection – mark ready for motion
      12. CID 2245
          1. Change the resolution because we determined that this should be might not can.
          2. Proposed Resolution: Revised; Change from “may be transmitted with 20..or 40” to “can be transmitted with 20 MHz bandwidth and might be transmitted with 40MHz” bandwidth”
      13. CID 2293
          1. Review comment.
          2. Proposed Resolution: Accept
          3. No objection – mark ready for motion
      14. CID 2395
          1. Review comment
          2. Desire to change “ERP-compliant” to “ERP PHY shall”.
          3. Discussion on value of “-compliant”
          4. Discussion on what ERP PHY is. Change to just ERP. The “P” stands for “PHY”.
          5. Proposed resolution: REVISED (GEN: 2014-03-18 09:22:23Z) Incorporate changes as noted in doc 11-14/344r1 for CID 2395
          6. No objection mark ready for motion.
      15. CID 2249
          1. Review comment.
          2. This really should be a “might”
          3. Proposed Resolution: Revise; Change “may” to “might”
          4. No objection – mark ready for motion
      16. CID 2450
          1. Review comment.
          2. Proposed Resolution: Accept
          3. No objection – mark ready for motion
      17. CID 2443
          1. Review comment.
          2. Proposed Resolution: Accept
          3. No objection – mark ready for motion
      18. CID 2463
          1. Review comment.
          2. This CID was moved to doc 11-14/207, so this may come up in different proposal.
          3. Look at Annex O –
          4. Figure O-2 the 2007 version verses the current figure, the diagonal line is missing.
          5. Discussion on the mapping of the diagram and the problem
          6. There was an editor note to revisit this diagram as it is not correct.
          7. AID 0 is not the first row of the table, but it may be that it is a bit. The text should be adjusted as well as neither the text and the bitmap match each other nor what the consensus of the process here.
          8. The comment from CID 234 did not make things correct.
          9. in figure O3 delete the angle arrow.
          10. In Figure 0-5; AID 0 is not noted question is if it should be added.
          11. In Figure 02; delete the horizontal arrow
          12. There is a problem in the Bitmap Control is the same in both figure so this shows this is a problem.
          13. Decoding the BitMap Control was then discussed.
          14. P674 in D2.5 look at text
          15. Looking at figure O7 – for example that seemed correct.
          16. B0 is on the left
          17. A concern of the possibility that not all the instructions in CID 234 were completed in the draft creation.
          18. Look for agreement. In Figure O-7 change “example to “Example”
          19. In figure O-3 we now do not agree.
          20. If we keep AID 0 in O-2
          21. We have run out of time. As can been seen in reading the minutes above there is a lot of confusion on this topic.
          22. Next Meeting we will complete this CID.
  1. Recess at 6:03pm

1. TGm REVmc Meeting Minutes for Wednesday 19 March 2014 by Dorothy STANLEY at 1:33pm
   1. Review Agenda for this slot:
2. Comment Resolution – CID 2170 for 11ad (doc:11-14-311),
3. Location (doc: 11-13-1509, doc: 11-14-32, 11-14-160),
4. CIDs 2468, 2490 – Brian HART,
5. MAC Comments Mark HAMILTON
   1. **Review Doc 0311r1**
      1. CID 2170 MAC
         1. Reviewed the paper
         2. Proposed Resolution: REVISED (MAC: 2014-03-19 05:40:35Z): Delete the cited sentence.
         3. No objection – Mark ready for motion
   2. **Review Doc 11-13-1509r5 Brian HART**
      1. Review document
      2. There was some minor edits so an “R6” will need to be posted.
      3. Some questions on the example, but as it being replace in another proposal, then we will not worry about it here in the document.
      4. The new version will be posted and considered in Thurs PM2 meeting.
      5. CID 2404:
         1. Proposed Resolution: REVISED (MAC: 2014-03-19 06:24:57Z): Incorporate the changes as shown in 11-13/1509r6.
      6. CID 2403: Proposed Resolution: REVISED (MAC: 2014-03-19 06:24:57Z): Incorporate the changes as shown in 11-13/1509r6
      7. No objection for either CID – mark ready for motion for both
   3. **Review Doc 11-14/32r2 Gabor BAJKO**
      1. Review Document
      2. CIDs 2402, 2492, 2491 and 2493. Baseline is 11mc v2.2.
      3. Question on why remove the Measurement Request Field format for LCI request?
         1. Concern on the value of the existing description
      4. Why remove 8.4.2.20.10 fields?
         1. Simplifies the exchange on location
      5. Longer discussion on what the reason/rationale was for some of the changes
      6. Need the “degree” symbol after the Longitude/Latitude values
      7. Why is the value in 8.4.2.21.10 given in both big endian and little endian.
      8. On page 4 there is a “the result of this equation is 18, which is encoded as ...” this seems less than useful. Need to have a full vector that may be used to show how this is to be put in and the output, but the intermittent values are not as important.
      9. Run on sentence noted – not a lot of consensus on how to fix, but the Editor said let him take care of this nits.
      10. Extraneous “”” on page 5...simple changes that again the editor could have taken care of.
      11. Question on the different “Altitude”s ?
          1. RMrequest Altitude, LciAltitude, APAltitude, etc..there seems to be a bunch of these that have not been addressed.
      12. Plan to have Gabor and Mark get together and refine/revise the document for correction.
   4. **Review Doc 11-14/160 Carlos ALDANA**
      1. Review document
      2. contains some proposed resolutions to comments CID 2164 and CID 2407
      3. Discussion on recommended or desired.
      4. Several “can be ignored” that should be replaced with “is reserved” in some cases.
         1. The Response has a partial
         2. No meaning to partial TSF, but ASAP is done by request.
         3. In the last sentence of that paragraph should also just be removed.
      5. Changes during the discussion will cause an R4 be created.
      6. Initial Fine Timing Request frame – does it exist?
         1. It is a concept, and should have a lower case “i”.
         2. Not a frame format specifically
      7. Concern on the “First” – the frame initiating the sequence.
         1. Change to have the “first” be the one that initiates the sequence.
      8. Question on the Fine timing Measurement Frame
         1. Remove the strike out on page 3 that was added during the conversation.
      9. Units for TSF are not as important as knowing which bits to use.
         1. Suggested that the Partial TSF Timer field description be put in a note, but something to take under advisement.
      10. Suggestion to put in a Note that 10-ms is a reasonable time to wait.
      11. Change the number of bursts exponent field is determined. Page 5
      12. There were some more discussion on how to improve the document, and it was also taken as a positive suggestion to improve the document.
      13. “Trigger field value set to 1”
      14. When you start a new session in the middle, we are not using the “initial” terminology in the text. The “initial” is the initial in a sequence.
      15. Ran out of time
      16. Thursday PM2 will review both the 11-14/32 and 11-14/160 – expect that the new versions will be posted in compliance
   5. Recess at 3:30pm
6. TGm REVmc Meeting Minutes for Wednesday 19 March 2014 by Dorothy STANLEY at 4:01pm
   1. Review Agenda for this slot:

1. CIDs 2423, 2424 – ERP PHY

2. CIDs 2411, 2412 – DSSS deprecation

3. 11-14-0367 – Privacy enhancements

4. 11-14-207, 275, Adrian, Mark HAMILTON assigned comments

* + 1. No objection to the agenda
  1. Current status
     1. 4 CIDs related to Deprecation – CID 2411, 2412, 2423, 2424
     2. 2 Documents about Deprecation
        1. <https://mentor.ieee.org/802.11/dcn/13/11-13-1533-02-000m-clause-16-and-17-deprecation.docx>
        2. <https://mentor.ieee.org/802.11/dcn/14/11-14-0415-01-000m-phy-recommended-practice.pptx>
     3. Work items from Jan 2014
        1. Liaison letter to WFA – Brian HART, Andrew MYLES
        2. Usage related text, rather than excision – Menzo, Carlos CARDIERO
        3. “Should not” behavior text – Sean COFFEY
     4. Slides 9-13 from 11-14/222r4
  2. **Review document 11-14/0415r1 Sean COFFEY**
     1. Why the document was prepared was explained.
     2. Background on slide 3
     3. Rational for why it is important for supporting the 6Mbps mode in g.
     4. Possible Straw-polls
        1. The presentation has two motions that the presenter would like to see in the draft:
        2. **Motion 1:**

In Clause 16.1 (DSSS PHY specification for the 2.4GHz band designated for ISM applications—General), add

* “A DSSS (Clause 16) STA should support the mandatory features of Clause 19 (ERP).” and

In Clause 17.1 (HR/DSSS PHY Specification—General), add

* “An HR/DSSS (Clause 17) STA should support the mandatory features of Clause 19 (ERP).”
  + - 1. **Motion 2:**

In Clause 9.7.5.7 (Rate selection for other individually addressed Data and Management frames), add

* “An ERP STA should not transmit other individually addressed Data and Management frames to ERP STAs using the 5.5Mbps or 11Mbps rates.” and
* “An ERP STA that transmits a frame to an ERP STA using the 1Mbps or 2Mbps rate and that receives an acknowledgment or block acknowledgment with a received energy that is equal to or greater than –62 dBm should use an ERP-OFDM rate or HT or VHT rate for the next frame transmitted to that STA.” and
* “An ERP STA should not transmit a Probe Request using the 1Mbps or 2Mbps rate in any channel unless it has transmitted a Probe Request using the 6Mbps rate in that channel within the previous 65535 TUs.”
  + 1. Discussion:
       1. Some support for the proposal, but would like to see a more severe change.
       2. Description of other concerns for relying on the 6Mbps only, so we may need to think of more options. Concern for using the Probe Request and forcing a STA to use a different rate may be an issue.
       3. Concern for making the changes now, rather than waiting for the Wi-Fi Alliance to respond as we sent a letter asking for a response by July, and we are being rude not to wait for the response. We should look to maybe use more definitive/mandatory language rather than “should” language. Maybe a bit early for a decision at this time.
       4. Looking for ways to avoid deprecation, but rather how to improve the use of the frequency is a positive thing. Not as concerned with the first motion, but the 2nd motion is a bit more of a concern, and we should give it a bit more time to consider the ramification. The 2nd motion won’t eliminate the use of the b rates as the client may only be reached by 1 – 2 Mbps, but they would need protection. Also concerned with the timing of having this proposal prior to the Wi-Fi Alliance response.
       5. Given that the next proposal is an alternative proposal, would it be better to hear it prior to having strawpoll?
       6. Why do we need protection for the 11b range devices? Then you have to send in the lower rate to provide the detection.
       7. Strong agreement with waiting for the Wi-Fi Allinace response, but there is no problem with getting the discussion and the straw-polls to determine how the group feels about things. While we could be stronger in the language, and discouraging the use of below 5.5 Mbps is good. Because VHT does not operate in 2.4Ghz, you may not need that in the proposed changes. As we know, 11ah is working on the longer range, and so starting this process now ahead of 11ah is not such a bad problem.
    2. Response to the discussion items.
       1. Happy to hold off on the motions, but would like to have the straw-poll to get the sense of the group.
       2. Not wanting to feel obligated to wait for the Wi-Fi Alliance to get around to responding, but rather this is our work that we should be involved in getting done in a timely manner and not waste a Letter ballot cycle.
       3. For backward compatibility to the 11b devices, we would like to protect the newer devices. Shall be backward compatible is a requirement. The new devices should behave with the existing devices.
       4. Would like to have the strawpoll on the first motion, and then split the 2nd motion into two different polls.
    3. **Strawpoll 1:**

In Clause 16.1 (DSSS PHY specification for the 2.4GHz band designated for ISM applications—General), add

* “A DSSS (Clause 16) STA should support the mandatory features of Clause 19 (ERP).” and

In Clause 17.1 (HR/DSSS PHY Specification—General), add

* “An HR/DSSS (Clause 17) STA should support the mandatory features of Clause 19 (ERP).”
  + - 1. Results: 22-8-13
    1. **Strawpoll 2:**

In Clause 9.7.5.7 (Rate selection for other individually addressed Data and Management frames), add

* “An ERP STA should not transmit other individually addressed Data and Management frames to ERP STAs using the 5.5Mbps or 11Mbps rates.”
  + - 1. Results: 12-13-18
    1. **Strawpoll 3:**

In Clause 9.7.5.7 (Rate selection for other individually addressed Data and Management frames), add

* “An ERP STA that transmits a frame to an ERP STA using the 1Mbps or 2Mbps rate and that receives an acknowledgment or block acknowledgment with a received energy that is equal to or greater than –62 dBm should use an ERP-OFDM rate or HT or VHT rate for the next frame transmitted to that STA.” and
* “An ERP STA should not transmit a Probe Request using the 1Mbps or 2Mbps rate in any channel unless it has transmitted a Probe Request using the 6Mbps rate in that channel within the previous 65535 TUs.”
  + - 1. Results: 4-28-12
  1. **Review Doc 11-14/1533r3 Graham SMITH**
     1. Provided introduction on why version was created.
     2. The use of Deprecated is “discouraged”
     3. The use of the current Deprecated process would mean we would not remove this until 2020 at best.
     4. Close to the previous presentation.
     5. Present the proposed change as listed on page 3 and 4
     6. Several motions are embedded in the document, maybe a strawpoll would be helpful
     7. Discussion
        1. Counter offer: “For 11b only frame, Transmission capability for 1, 2, 5,5 and 11Mbps is optional, and is not recommended, for data and management frames, but...”.
        2. Discussion on how to edit the text was done to improve the text.
        3. Legacy B devices are not going to understand OFDM, so having the RTS/CTS should be sent at a rate that they can understand.
        4. Counter for 16 and 17– “Use of Clause 16/17 is not recommended for data and management frames”
        5. Concern of what if I have an AP that has precluded a 1Mbps operation precluded, so how can we force them to use this.
           1. This is a deliberate attempt to preclude slow devices from dragging down the whole network. If I have a slow set of devices, then let them use a consistent set of devices at the speed that they support.
           2. This proposal seems a much clearer path to incremental improvement.
           3. IoT could be done as a separate system better.
        6. There are other devices that are using the 2Mbps, and the short pre-amble is defined in Clause 17, and so we would need to be careful that we encourage the short pre-amble, not the long one.
        7. The Growing market (IoT) should use the 802.11 network. Having a new product category we require a new ecosystem definition. The current benefit of WLAN today is that infrastructure that is already deployed in most every home today. If we change this then we loose all the benefits of having the established deployment.
           1. The 6Mbps should be sufficient in most cases, and understand the concern that it may or may not be sufficient.
           2. The 11b devices are going to slow the entire network down.
     8. Strawpolls
        1. Straw Poll #4: I support the following change (Y/N/A):

In 19.1.2 change from

“Of these rates, transmission and reception capability for 1, 2, 5.5, 6, 11, 12, and 24 Mb/s data rates is mandatory.”

To

“Of these rates, reception capability for 1, 2, 5.5, 6, 11, 12, and 24 Mb/s data rates is mandatory, transmission capability for 1, 2, 5.5, and 11 Mb/s is optional, and is not recommended, for data and management frames, but transmission capability for 6, 12, and 24 Mb/s data rates is mandatory.”

* + - * 1. Result: Yes: 12, No:16 , Abstain: 14
      1. Strawpoll #5: I support the following change (Y/N/A)

Add following directly after the heading for Clause 17.

“Use of Clause 17 is not recommended for data and management frames.”

* + - * 1. Result: Yes: 12, No:17 , Abstain: 11
  1. Results of the strawpolls
     1. None of the strawpolls would have passed as a motion
     2. Motion in May may be the best alternative for now.
     3. If we are waiting on Wi-Fi Alliance, then maybe the letter ballot could wait also.
     4. The current plan is that the next Letter ballot is expected in May at the interim, so gaining more consensuses between now and then is probably the best path.
  2. **Review document 11-14/0430r1 slide deck - 11-14/0367r2 text Dan HARKINS**
     1. This is dealing with pervasive monitoring that is a topic currently being discussed in the IETF and other forum.
     2. 11-14/430r1 is a slide deck to introduce the subject
     3. Presentations on how bad use of Wi-Fi has been in the news.
     4. Random is not a new thing, we use it in the standard already
     5. The equation in slide 10 is wrong, but on slide 11, we see that the probability is very small.
     6. The possibility with 2 to the 44 is 1 in 35million
     7. Discussion on whether the number was sufficiently defined.
     8. There was concern that the address has to be unique within the Bridged-LAN to allow proper functionality.
        1. There must be a way to detect a collision of the choice
        2. The detection needs to have protocol to find an address
        3. There is a difficulty to find out if there is a collision if we don’t have an address already.
     9. The GPS and Cellphone are traceable as well, so why are we picking on WLAN.
     10. This was presented before in WNG and did not get much support there, so why is this in TG REVmc?
     11. Let’s get back to the presentation (slide 9)
     12. 11-13/1448r1 – 802.11 privacy (reference noted in presentation).
     13. There are other stakeholders that may not be addressed, and there may be some legal options that are sufficient to solve some of these. There are other protocols and needs to determine that only authorized devices are on the network, but if the devices are changing the MAC address, we won’t be able to determine which are valid. Issue with the ecosystem not all changing to account for this as many entities in the ecosystem depend on the MAC address being the identity.
         1. Saying this is like WEP is not a valid issue
         2. The legal issues are not a real thing, there is not a lawful intercept for this.
     14. Privacy is important to people, but should be more important to more people. We could change the MAC address now using the standard. If we look at how people could use the MAC address to solve the Tracking problem is only one case, and the addition of forcing the MAC address to change only solves part of the problem, but rather than changing the standard, we should give people information on how to do the things noted in the presentation.
         1. Of course it does not solve all the problems...this is just 802.11
     15. The IETF STRINT presentation had many of the cases that were highlighted in the presentation. There is a lot of issues, but the conclusion is to try to fix things one by one and MAC address animosity is one of those being discussed. The devices we have are broadcasting MAC addresses without anyone really realizing this. IPv6 is based on the MAC address being stable.
     16. Interesting points have been presented, but we need to look at solving more of the larger problem. The stopping of Probe Response is a big issue that we should promote. The 802.11p has used the private MAC address, and we could use it here as well. Obviously we would have a headache tracking issues from a management standpoint
         1. When 11p used the random MAC addresses, they did not find legal issues.
     17. The Privacy issue is a large problem. We may need to look at adding more proposals for other issues.
  3. We have run out of time
  4. We will meet again tomorrow Thurs PM1.
     1. We will not be discussing this topic more this week.
  5. 802 Vice Chair Pat THALER asked to speak as the Vice-Chair
     1. There is an 802 AdHoc call on STRINT and we should look to do things at a coordinated level for all of 802 not just in 802.11 or some other WG.
  6. Recessed 6:01pm

1. REVmc Meeting Thursday PM1 called to order by Dorothy STANLEY 1:30pm
   1. Review Agenda (see 11-14/0222r5)

Comment Resolution – database status

1. CIDs 2409 (TxOp Limit), 2413 (CCA levels) (GSmith),
2. CID 2425 (MRison) – Take up on Telecon
3. 11-14-275 (shall ignore) take up on Telecon,
4. CID 2199 (Authentication DMG) Carlos
5. 11-14-207 (multiple) Adrian
   * 1. The order may change, but we will start with Carlos
   1. **Review Doc 11-14/0268r1 Carlos CODIERA**
      1. CID 2199
         1. Review the proposed change to the State Variables
         2. Description of changes reviewed one by one.
         3. Cool display of original text at 10.3.2.1
         4. Issue with the title 10.3.1 “State Variables” why is it plural and if so where is the list of variables...the issue is in what is “This state variable” is?
            1. The reason for the plural is that there is one variable per station per station link. There is more than one when looking at the stations link per station to station links.
         5. Question on State 1 naming and how it is being described.
            1. The name of the state should be first and then the description.
            2. The question of what the line should be was a concern.
            3. The author did not want to make further change at this time, as it is just inverting the order of the phrases, and should be an editorial issue.
         6. No objections to proceed with this doc for resolving CID 2199 as is, but realize we may make further changes later.
         7. Question on “Shall discard”? – are you going to test for this? What does this mean? Do you have to “purge” it from memory? How to test for this?
            1. This applies to all the “Shall Discard” and we should discuss this separately.
            2. The impact of the discarding is that you do not go to State 1.
            3. Concern on how it was worded.
            4. Change 10.3.4.5 from “Shall Discard” to “that receives a Deauthentication frame shall remain in the same state if it did not perform an IEEE Std. 802.11 authentication “
         8. Proposed Resolution: REVISED (MAC: 2014-03-20 05:59:44Z): Make changes as indicated in 11-14/0268r2.
   2. **Review Doc 11-14/207r3**
      1. CID 2292 GEN
         1. Review comment
         2. Discussion on the use of “may”, “might” and “can”.
            1. Might – possible or not
         3. Proposed Resolution: REVISED (GEN: 2014-03-20 06:08:25Z) change "may" to "Might at cited location, and change "at any given instant" to "at the same ".
         4. After debate, consensus to use the proposed resolution:
      2. CID 2294 GEN
         1. Review comment
         2. Proposed resolution: REJECTED (GEN: 2014-03-20 06:15:04Z). Various security properties exist at various levels of the network stack. The concern of 802.11 is the link layer (MAC sublayer and below). In this regard, a wired network and a wireless network are distinct because the wireless network does not need a physical connection to a medium. While a wired network might deploy link layer protection, it typically does not. The reverse is true for a wireless network. These paragraphs give the rationale behind this distinction.
      3. CID 2010 GEN
         1. Review Comment
         2. There are four ‘rate set’ concepts, and each one has a different semantic model. There is little rationalization of these.
         3. Discussion on the models...
            1. Propose to remove the 11n and 11ac Operation MCS sets.
            2. The changes are relative to D2.4 so that it can address the 11ac at the same time.
            3. We will delete the BSSBasicMCSSet as it is duplicate as it is in the field of the Operation Parameter.
         4. **Discussion from doc 11-14/207r3**

Redundancy exists around the BSSBasicMCSSet, which is present in the HT Operation element.

Redundancy possibly exists around the HTOperationalMCSSet, which duplicates information (supported MCSs) present in the HT Capabilities element. In this case the picture is more complex, because we have differing models emerging.

1. The OperationalRateSet parameter represents both a restriction on the devices transmit behaviour and the only thing known by other STAs about its receive capabilities. The value of this Set is exposed by a read-only MIB variable.
2. The HTOperationalMCSSet represents a restriction on a device’s transmit behaviour, independent of its capabilities. The value of this parameter is related to (presumably set by) a related read-write MIB variable. But the following are difficult:
   1. “The STA’(#1485)s HTOperationalMCSSet shall include all of the MCSs in the BSSBasicMCSSet.” is a requirement on the external entity programming this MIB variable.
   2. D2.0 182.16 “The STA shall be able to receive at each of the data rates listed in the set.” indicates that the .11n authors thought this was a receive capability, which it is not.
   3. The BSS Description includes the HTOperationalMCSSet, but this set is not transmitted in a Beacon frame, so there is no way this can be known.

3. .11ad doesn’t have this parameter. It has mandatory MCSs and it has supported MCSs.

4. VHT has yet another model. Its OperationalVHTMCS\_NSSSet provides a transmitter restriction, but is present only in the JOIN.request. There is no related MIB variable.

* + - 1. Question on “adopt” and what it means.
      2. Continue in the document review and the proposed changes.
      3. Question on the use of “greatest” – is it the largest? Yes
      4. Question on the Mesh case, was explained.
      5. Question on how the change in 1219.30 was written.
         1. No alternative proposal, but questions on how it was written is nice, but we need to have valid proposals for alternatives, but we should not debate each line as the presentation is given.. Just note the errors.
         2. There are 4 models, and the text addresses #2, #4 and model’s 1 and 3 are not being included.
      6. Need to add a “why” statement to the Deprecated MIB.
      7. Proposed resolution: Revised, Incorporate the changes in 11-14/207r4 as related to CID 2010.
      8. No objection – mark ready for motion
    1. CID 2118 GEN
       1. Has been resolved in Motion #48
    2. CID 2123 GEN
       1. Review comment
       2. Proposed Resolution: REVISED (GEN: 2014-03-20 06:53:19Z) Globally change the names of the primitives as shown under CID 2123 in 11-14/207r4.
       3. No objection – mark ready for motion
    3. CID 2049 MAC
       1. Review Comment
       2. Proposed Resolution: Revised. Replace “transferred” with “transmitted” at cited location.
       3. No objection – mark ready for motion
    4. CID 2051
       1. Review comment
       2. There are 8 pages of analysis to remove “desires and desired”
          1. Reviewed the proposed changes.
       3. Ran out of time – did not get to proposed resolution.
  1. Recess at 3:30pm

1. REVmc Meeting Thursday PM2 called to order by Dorothy STANLEY at 4pm
   1. Agenda for the final meeting slot:
2. Comment Resolution – 11-14-32, 11-14-160,

CIDs 2468, 2490 – BHart,

MHamilton comments

1. Motions
2. Plans for May, Schedule, AOB
3. Adjourn
   * 1. No objection to agenda
   1. **Review doc 11-14/0032r4**
      1. CIDs 2402, 2492, 2491, 2493 (Carlos, Location topics)
      2. Updated since yesterday’s session: Examples revised where details of over-the-air transmission are shown, some typos fixed.
      3. Realized some more examples of hexadecimal representation should be deleted. Delete those now. Will post 11-14/32r4.
      4. We agreed to put degree symbols on the lat/long examples. Fix that now, in r4, also.
      5. MIB variable changes are still needed. Gabor will do that in a submission for next time.
      6. Editor will fix up references to IETF documents to match the style guide.
      7. Asked if the reversals, at the octet level but not at the bit level, are correct? No clear concern. Left them as is.
      8. “set to zero” change to “set to 0” (bottom of page 4)
      9. “LCI configuration information report” change to “LCI configuration information report” at top of page 5.
      10. Fixed several places that should be capitalized.
      11. No objections. Mark all four CIDs ready for motion; resolution is “Make the changes shown in 11-14/32r4.”
   2. **Review Doc 11-14-/160r7 Carlos CORDIERO**
      1. CID 2164 and 2407
         1. Review new version of document
         2. Carlos noticed more changes needed in 6.3.58.4, and made those
         3. No questions
         4. Proposed Resolution for CID 2164: REVISED (MAC: 2014-03-20 08:23:39Z): Make changes as shown in 11-14/160r7.
         5. Proposed Resolution for CID 2407: REVISED (MAC: 2014-03-20 08:23:39Z): Make changes as shown in 11-14/160r7.
         6. No objection – mark ready for motion
   3. **Review doc 11-14/376r1 Brian HART –** 
      1. CID 2490 MAC
         1. Review Comment
         2. Proposed Resolution: REVISED (MAC: 2014-03-20 08:28:36Z): Make changes as shown in 11-14/376r2 for CID 2490
         3. No objection – Mark ready for motion
      2. CID 2468 MAC
         1. Review comment
         2. Proposed Resolution: REVISED (MAC: 2014-03-20 08:28:36Z): Make changes as shown in 11-14/376r1 for CID 2490
         3. No Objection – Mark ready for motion
   4. **Return to doc 11-14/32r4** (yet to be posted – edit in meeting)
      1. Concern on the LCI Report
      2. Look at D2.2 figure 8-187
      3. In the proposal, it seems that the conversion of the long string of binary over the air and then converting back and forth seems now to be reversed in the presentation.
         1. This seems to be incorrect
         2. The ability to see the big-endian vs little-endian is easy on a single octet, but seems rather hard over long fields.
         3. Struggle with how we represent “over the air” and how it is represented in memory.
         4. Long debate on how this should be described.
      4. For now we should delete the Hex and Little-endian example to allow the rest of the document.
         1. We may want to get rid of the bits also, but this was not fully agreed, the discussion was on what the value of the bit string by itself is not as useful.
         2. We should remove all of it for now, and we can add it later when we have more consensuses on how to represent this.
      5. Discussion on if we need the degree symbol
         1. The numbers are a direct copy of the Latitude/Long is from IETF document so it should be good enough
      6. We will need to unmark the following CIDs from being ready for Motion:

CID 2492, 2491, 2493 and 2402

* + - 1. **Action item:** Move 2402 from GEN to MAC
  1. Stand at ease to check the database and ensure state of CIDs. 4:50pm
  2. Resume 5:00
  3. **Motion #49 – Tuesday, Wednesday, Thursday Comments**
     1. Approve resolutions to comments in doc11-13/361r27 Tab “Motion MAC V” and in doc 11-13/1160r9 Tab “Gen Motion Beijing A” and in doc 11-13/233r27 Tab “Editor” CID 2015.
        1. Moved by Jon ROSDAHL 2nd Mark HAMILTON
        2. Results 11-0-1 motion passes
  4. **Review Doc 11-13/15r1 Graham SMITH**
     1. CID 2409 – MAC
        1. TXOP Limits
        2. Review Presentation 11-13/14r1 slides to describe the problem
        3. Update of the TXOP limit values for AC\_BK and AC\_BE to be 3.264 ms and 2.080ms. This replaces a “0” in the table.
        4. Change the AC\_VI setting to 6.016ms and 4.096ms
        5. Can the length of a packet being transmitted be limited? Yes the 11b only cannot transmit without fragmenting within the TXOP limit.
        6. If it is not possible to fragment, then there is an escape clause in the standard to deal with that case.
     2. Note that the MIB has these same tables in the description, and will need to be updated.
     3. An R2 will need to include the CID number and corrections to the MIB as well.
     4. This will be continued on a Conference Call.
  5. CID 2413 – will delay this CID/topic to a Telecon
  6. **CID 2434 GEN -- Mark HAMILTON**
     1. **Review 11-13/115r10**
        1. Originally we reviewed r7 last time in Los Angeles.
        2. Review original Figure 5-1 – d2.5
        3. Review the proposed replacement (see page 18)
           1. “Puzzle box” to allow for options
           2. A Mesh Gate can connects a MESH STA to a DS
           3. Maybe you could add conical lines to make this look like a peep to the optional boxes
           4. The Mesh Gate which is not able to be called a portal
           5. It does not show a portal either, but that is a different beast.
           6. For consistency could the Non-AP STA have a big Arrow for the same view like that the other two boxes.

This was chosen to be more like the other boxes in the stack

Concern on wanting the direction through the DA Address filtering box.

* + - 1. Review the proposed replacement for Figure 5-2
         1. Two stations that can do a transparent FST
         2. This is shown in the new diagram.
         3. A DMG STA cannot be a MESH STA
         4. The Puzzle piece in 5.2 will point to the 5.1, and that breakout box will need to preclude the DMG STAs.
      2. Issue with duplicate detection
         1. Fragmentation occurs when duplication is done.
         2. Defragmentation does not have to happen before duplication detection
         3. The Fragmentation box could be hiding the duplication operation.
         4. The text indicates that duplicate detection to keep the defrag block from doing the detection.
         5. Need to move the Duplicate Detection below the Fragmentation block.
    1. Request to review by the group and updates from the discussion today will be applied and we will discuss on a conference call.
  1. Review status
     1. Doc 11-14/32r4 (LCI config)
     2. Doc 11-13/15r3 (TxOp)
     3. Now posted
  2. Review Document 11-14/32r4 (as posted) Gabor
     1. The example was put back in with only binary bits shown to so the intermediate steps and then the final Hex transmission order
     2. Proposed Resolution for CIDs 2402, 2492, 2491, and 2493 as Revised – Incorporate the text changes in 11-14/32r4.
     3. Concern on the change that was there before is now missing.
  3. **Motion #50 LCI Config**
     1. Approve the resolutions for CIDs 2402, 2492, 2491, and 2493 as Revised – Incorporate the text changes in 11-14/32r4 and change from “The LCI configuration information report” to “The LCI report” (last line page 4).
     2. Moved Stephen 2nd Adrian
     3. 14-0-0
  4. Review document 11-13/15r3 (as posted) Graham SMITH
     1. Show that the changes to the MIB as requested are indeed now in the document.
     2. No other changes are in the file.
     3. Proposed Resolution: CID 2409 -
  5. **Motion #51 TXOP**
     1. Approve the resolution to CID 2409 as “Revised, Incorporate the text changes in 11-13/15r3”
        1. Moved by Stephen McCann, 2nd Graham Smith
        2. Results: 10-0-0
  6. Mar-May Meeting Planning
     1. Conference calls April 4, 11, May 2
        1. Topics to include: (see slide 23 in 11-14/0222r6
     2. Adhoc Meeting None
     3. Look to add TGaf into the draft prior to May
  7. Review Project Plan
     1. We took 245 days for the intial WG Ballot
     2. We took 241 for the recirc
     3. We need to go faster for the next rounds
     4. Expect that we could get to Dec 2015 REVCom if we are aggressive, but give our current rate of completion, we are probably going to slip at least 6 months, so we have to look at making better process.
  8. Adjourn at 6pm.

**References:**

**Meeting Agenda Slides:**

<https://mentor.ieee.org/802.11/dcn/14/11-14-0222-06-000m-tgmc-agenda-march-2014.ppt>

<https://mentor.ieee.org/802.11/dcn/14/11-14-0222-05-000m-tgmc-agenda-march-2014.ppt>

<https://mentor.ieee.org/802.11/dcn/14/11-14-0222-04-000m-tgmc-agenda-march-2014.ppt>

<https://mentor.ieee.org/802.11/dcn/14/11-14-0222-03-000m-tgmc-agenda-march-2014.ppt>

<https://mentor.ieee.org/802.11/dcn/14/11-14-0222-02-000m-tgmc-agenda-march-2014.ppt>

<https://mentor.ieee.org/802.11/dcn/14/11-14-0222-01-000m-tgmc-agenda-march-2014.ppt>

<https://mentor.ieee.org/802.11/dcn/14/11-14-0222-00-000m-tgmc-agenda-march-2014.ppt>

**Closing Report:**

<https://mentor.ieee.org/802.11/dcn/14/11-14-0461-00-000m-tgmc-closing-report-march-2014.pptx>

**IEEE Patent Policy:**

<http://standards.ieee.org/board/pat/pat-slideset.ppt>

**Approved prior meeting minutes:**

<https://mentor.ieee.org/802.11/dcn/14/11-14-0129-00-000m-revmc-minutes-for-jan-2014-la.docx>

<https://mentor.ieee.org/802.11/dcn/14/11-14-0226-03-000m-tgmc-feb-2014-telecon-minutes.docx>

**Editor Report:**

<https://mentor.ieee.org/802.11/dcn/13/11-13-0095-09-000m-editor-reports.ppt>

**WG Ballot Composite Comments:**

<https://mentor.ieee.org/802.11/dcn/13/11-13-0233-27-000m-revmc-wg-ballot-comments.xls>

https://mentor.ieee.org/802.11/dcn/13/11-13-0233-26-000m-revmc-wg-ballot-comments.xls

**MAC Comment Resolution:**

<https://mentor.ieee.org/802.11/dcn/13/11-13-0361-27-000m-revmc-mac-comments.xls>

<https://mentor.ieee.org/802.11/dcn/13/11-13-0361-26-000m-revmc-mac-comments.xls>

<https://mentor.ieee.org/802.11/dcn/13/11-13-0361-25-000m-revmc-mac-comments.xls>

**GEN Comment Resolution**:

<https://mentor.ieee.org/802.11/dcn/13/11-13-1160-09-000m-lb199-gen-adhoc-comments.xls>

<https://mentor.ieee.org/802.11/dcn/13/11-13-1160-08-000m-lb199-gen-adhoc-comments.xls>

<https://mentor.ieee.org/802.11/dcn/13/11-13-1160-07-000m-lb199-gen-adhoc-comments.xls>

**Presentation files:**

<https://mentor.ieee.org/802.11/dcn/14/11-14-0268-02-000m-resolution-to-cid2199.docx>

<https://mentor.ieee.org/802.11/dcn/14/11-14-0268-01-000m-resolution-to-cid2199.docx>

<https://mentor.ieee.org/802.11/dcn/14/11-14-0030-02-000m-discussion-on-cid2199.pptx>

<https://mentor.ieee.org/802.11/dcn/14/11-14-0406-01-000m-11ad-related-fixes-cid2110.docx>

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<https://mentor.ieee.org/802.11/dcn/14/11-14-0041-01-000m-mc-security-comment-resolution.docx>

<https://mentor.ieee.org/802.11/dcn/14/11-14-0057-05-000m-cid2129-rewrite-of-probe-response-text.doc>

<https://mentor.ieee.org/802.11/dcn/14/11-14-0207-05-000m-lb199-stephens-comments.doc>

<https://mentor.ieee.org/802.11/dcn/14/11-14-0207-04-000m-lb199-stephens-comments.doc>

<https://mentor.ieee.org/802.11/dcn/14/11-14-0207-03-000m-lb199-stephens-comments.doc>

<https://mentor.ieee.org/802.11/dcn/14/11-14-0344-01-000m-lb-199-comments.docx>

<https://mentor.ieee.org/802.11/dcn/14/11-14-0344-00-000m-lb-199-comments.docx>

<https://mentor.ieee.org/802.11/dcn/14/11-14-0032-04-000m-lci-resolutions.docx>

<https://mentor.ieee.org/802.11/dcn/14/11-14-0032-03-000m-lci-resolutions.docx>

<https://mentor.ieee.org/802.11/dcn/14/11-14-0032-02-000m-lci-resolutions.docx>

<https://mentor.ieee.org/802.11/dcn/14/11-14-0160-07-000m-proposed-resolution-for-revmc-cid-2164.doc>

<https://mentor.ieee.org/802.11/dcn/14/11-14-0160-06-000m-proposed-resolution-for-revmc-cid-2164.doc>

**2 Documents about Deprecation:**

<https://mentor.ieee.org/802.11/dcn/13/11-13-1533-03-000m-clause-16-and-17-deprecation.docx>

<https://mentor.ieee.org/802.11/dcn/13/11-13-1533-02-000m-clause-16-and-17-deprecation.docx>

<https://mentor.ieee.org/802.11/dcn/14/11-14-0415-01-000m-phy-recommended-practice.pptx>

**Privacy Presentation:**

<https://mentor.ieee.org/802.11/dcn/14/11-14-0430-02-000m-random-macs-for-privacy.pptx>

<https://mentor.ieee.org/802.11/dcn/14/11-14-0430-01-000m-random-macs-for-privacy.pptx>

<https://mentor.ieee.org/802.11/dcn/14/11-14-0367-02-000m-privacy-enhancements.docx>

<https://mentor.ieee.org/802.11/dcn/13/11-13-1448-01-0wng-802-11-privacy.pptx>

**TXOP:**

<https://mentor.ieee.org/802.11/dcn/13/11-13-0015-03-000m-txop-limits-text.docx>

<https://mentor.ieee.org/802.11/dcn/13/11-13-0015-02-000m-txop-limits-text.docx>