IEEE P802.11
Wireless LANs

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| Minutes for REVmd May and June 2018 telecons |
| Date: 2018-06-15 |
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Abstract

Minutes for REVmd 25th May and 1st, 15th and 22nd June 2018 telecons

R0 = REVmd May 25th Telecon

R1 = REVmd June 1st Telecon

R2 = REVmd June 15th Telecon

R3 = REVmd June 22nd Telecon

Teleconferences are subject to applicable policies and procedures, see below.

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•       IEEE Code of Ethics

–       <http://www.ieee.org/about/corporate/governance/p7-8.html>

•       IEEE Standards Association (IEEE-SA) Affiliation FAQ

–       <http://standards.ieee.org/faqs/affiliation.html>

•       Antitrust and Competition Policy

–       <http://standards.ieee.org/resources/antitrust-guidelines.pdf>

•       IEEE-SA Patent Policy

–       <http://standards.ieee.org/develop/policies/bylaws/sect6-7.html>

–       [https://development.standards.ieee.org/myproject/Public//mytools/mob/loa.pdf](http://standards.ieee.org/board/pat/pat-slideset.ppt)

–       <http://standards.ieee.org/board/pat/faq.pdf>

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

•       IEEE 802 Working Group Policies &Procedures (29 Jul 2016)

–       <http://www.ieee802.org/PNP/approved/IEEE_802_WG_PandP_v19.pdf>

•       IEEE 802 LMSC Chair's Guidelines (Approved 09 Mar 2018)

–       <https://mentor.ieee.org/802-ec/dcn/17/ec-17-0120-26-0PNP-ieee-802-lmsc-chairs-guidelines.pdf>

•       Participation in IEEE 802 Meetings

–       <https://mentor.ieee.org/802-ec/dcn/16/ec-16-0180-05-00EC-ieee-802-participation-slide.pptx>

•       IEEE 802.11 WG OM: (Approved 10 Nov 2017)

–       <https://mentor.ieee.org/802.11/dcn/14/11-14-0629-21-0000-802-11-operations-manual.docx>

1. **May 25, 2018 REVmd Telecon – 802.11md**
	1. **Called to order at 10:03 ET** by the TG Chair Dorothy STANLEY (HPE)
	2. Attendance:
		1. Dorothy STANLEY (HPE)
		2. Ganesh VENKATESAN (Intel)
		3. Chris HANSEN (Peraso)
		4. Mark HAMILTON (ARRIS/Ruckus)
		5. Emily QI (Intel)
		6. Joseph LEVY (InterDigital)
		7. Roger MARKS (Huawei)
		8. Mike MONTEMURRO (Blackberry)
		9. Sean COFFEY (Realtek)
		10. Menzo WENTINK (Qualcomm)
	3. **Reviewed Patent Policy** and Participation Policy
	4. **Review Agenda:**
		1. <https://mentor.ieee.org/802.11/dcn/18/11-18-1007-01-000m-tgmd-2018-may-june-teleconference-agendas.docx>

Draft agenda for the May 25th teleconference:

1.       Call to order, attendance, and patent policy

a.       Call for potentially essential patents: **If anyone in this meeting is personally aware of the holder of any patent claims that are potentially essential to implementation of the proposed standard(s) under consideration by this group and that are not already the subject of an Accepted Letter of Assurance:**

                                                               i.      Either speak up now or

                                                             ii.      Provide the chair of this group with the identity of the holder(s) of any and all such claims as soon as possible or

                                                           iii.      Cause an LOA to be submitted

b.      <https://mentor.ieee.org/802-ec/dcn/16/ec-16-0180-05-00EC-ieee-802-participation-slide.pptx>

2.       Editor report – Emily QI

a.       Editor report document, <https://mentor.ieee.org/802.11/dcn/17/11-17-0920-09-000m-802-11revmd-editor-s-report.ppt>

b.      Comments received on LB 232 are here: <https://mentor.ieee.org/802.11/dcn/18/11-18-0611-03-000m-revmd-wg-ballot-comments.xls>

3.       Comment resolution.

 **2018-05-25**

* + - 1. Youhan KIM – CID 1374 (10 mins)
			2. Sigurd S 11-18-701 CIDs 1359 (10 mins)
			3. Roger MARKS – CID 1533 (10 mins)
			4. Mike MONTEMURRO - PHY CIDs 1552, 1324, 1264, 1188, 1004, 1552 , 11-18-0899 (80 mins)
		1. No objection to the proposed agenda that was in the 11-18/1007r1
		2. Also reviewed upcoming meeting plans, and adjusted to match presenters’ availability.
	1. **Editor Report – 11-17/920r9** - Emily QI
		1. <https://mentor.ieee.org/802.11/dcn/17/11-17-0920-09-000m-802-11revmd-editor-s-report.ppt>
		2. Reviewed report
		3. Volunteers are helping with review of D1.1.
		4. CID 1486 (EDITOR) needs discussion. Will revisit later on this call.
	2. **Review Submission 11-18/949r3** – CID 1533 (MAC) - Roger MARKS:
		1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0619-00-000m-revmd-editor2-lb232-comments.xlsx>
		2. This is a minor revision of document reviewed in Warsaw.
		3. CID 1533 (MAC) – changes to Neighbor Report
		4. Since Warsaw, in discussion with Mark RISON, added clarification that an SSID is “corresponding to” an AP.
		5. No comments, or concerns.
		6. CID 1533, Ready for motion. Incorporate changes as shown in 11-18-0949r3. These changes clarify the use of the FILS Discovery frame.
	3. **CID 1486 (EDITOR)** - Emily QI:
		1. Reviewed email exchange on CID 1486.
		2. Intention was for ACCEPTED on this comment. However, Editors have determined that implementation of the resolution has some ambiguity.
		3. 1. Is the change only meant to apply to the Measurement Request/Reply frames, and not (for example) Measurement Request/Reply element?
		4. 2. In 6.3.14 and 6.3.16, it may not work to add “Spectrum” to the primitives.
		5. 3. Other issues. For example, in 4.3.11.9, “a Measurement Request frame” is not “a Spectrum Measurement Request frame”
		6. Move comment to MAC.
		7. ACTION #1: Assign to Emily, for further work.
	4. **PHY Motion A-comment** tab - Mike MONTEMURRO:
		1. CID 1004 (PHY):
			1. Similarly is arguably incorrect here. It is not the 802.1X AS that should not expose the key, it is the Authenticator. Nothing wrong with the bullet, without the “Similarly”
			2. Maintain the ACCEPTED proposed resolution.
			3. Ready for Motion.
		2. CID 1264 (PHY):
			1. This was REJECTED, because we are not maintaining deprecated features such as TKIP.
			2. Comment from Mark RISON, that if we are keeping feature text, it should not be incorrect.
			3. Discussion about how clearly we indicate features that are deprecated, where the reader will see it. In this case, at the top of 12.2 (in 12.2.1) we stated that TKIP is deprecated.
			4. Maintain the REJECTED resolution.
			5. Ready for motion.
		3. CID 1552 (PHY):
			1. Mark RISON comment that an RSNE does not have a PMKID field. Also, don’t we need to say REVSIED (and not ACCEPTED) if any change is directed, no matter how trivial?
			2. The major issue seems to be the concern about an “PMKID field” within an RSNE.
			3. Reviewed P2506.1. This seems to use PMKID field.
			4. Reviewed the format definition for RSNE. There is a PMKID Count and PMKID List, which is a list of PMKIDs. It does seem that “PMKID field” is incorrect, even though there are other occurrences in the text.
			5. Suggest changing the new text here to “added in the PMKID List field”.
			6. Reviewed P2505.8. This is an example of the same problem in the existing text.
			7. Searched for other examples of “PMKID field”.
			8. P2416.27: Probably should be “PMKID List field includes one PMKID which is KeyName”
			9. This will take a lot of time to check all existing occurrences and make sure they are correctly appropriately.
			10. We can resolve this comment (CID 1552), per the above change. Leave the other occurrences
			11. REVISED. With the Proposed Change, with the change to “PMKID List field” (above).
			12. Ready for motion.
			13. ACTION #2: Mike MONTEMURRO to check into the other existing occurrences.
		4. CID 1188 (PHY):
			1. Mark RISON comments: This is another (perhaps) deprecated feature, and should not be maintained.
			2. This is not a deprecated feature, it is a valid frame and field, with a possible value that indicates reference to a deprecated item.
			3. Maintain the ACCEPTED resolution.
			4. Ready for Motion.
		5. CID 1324 (PHY):
			1. Reviewed the concern that terms with shared words included are ambiguous. Disagree that this creates an ambiguity. The definitions are clear.
			2. Maintain the REJECTED resolution.
			3. Ready for motion.
	5. **Review Submission 11-18/0899r1** (<https://mentor.ieee.org/802.11/dcn/18/11-18-0899-01-000m-lb232-comment-resolutions-mmontemurro.doc>) – REVmd LB232 comment resolutions – Mike MONTEMURRO:
		1. CID 1228 (PHY):
			1. Reviewed comment.
			2. REVISED: At 3591.21, replace “Unsigned32” with “INTEGER”
			3. At 3601.44, replace “SYNTAX Unsigned32 (0..65535)” with “SYNTAX Integer32 (-255..255)”
			4. Ready for Motion.
		2. CID 1365 (PHY) CID 1366 (PHY):
			1. Reviewed comment and discussion.
			2. Disagree that concatenation is implied. The last argument (DataKDs) is meant to be a list.
			3. Now that we’re looking at nearby examples, the cases that say this argument is 0 (zero) is confusing. It should be an empty list in that case.
			4. It would be best to create a “list” notation, maybe using curly-braces, and clean up all uses.
			5. Noted that the next comment in this document (CID 1366) is similar.
			6. ACTION #3: Mike MONTEMURRO to create a submission making this change globally.
		3. CID 1019 (PHY):
			1. Isn’t there a real security issue here, because our medium is not reliable, so depending on having seen the frame before isn’t reliable?
			2. Not really.
			3. But, still agree it is too late to change this.
			4. REJECTED. The proposed change would make some existing implementations non-compliant.
			5. Ready for Motion.
		4. CID 1322 (PHY):
			1. Reviewed this with security experts, and think it is correct.
			2. There is an issue with the exact wording, though. Request EAPOL frames could have a different KeyReplay Counter sequence. We need to except that from the rule.
			3. Wordsmithed.
			4. REVISED. At the cited location change "On reception of message 4, the Authenticator verifies that the Key Replay Counter field value is one that it used on this 4-way handshake"

to

“On reception of message 4, the Authenticator verifies that the KeyReplay Counter field value is one that it used on this 4-way handshake and is strictly larger than that in any other EAPOL-Key frame that has the Request bit in the Key Information field set to 0 and that has been received during this session.”

* + - 1. Ready for Motion.
		1. CID 1341 (PHY):
			1. Consulted with security experts.
			2. REJECTED. It is not accurate to describe GCMP as being "excessively vulnerable to nonce reuse". GCMP, just like CCMP, has certain requirements that are specified in the standard. In particular, neither can be used in a manner that would allow transmitted to reuse the same nonce value with the same key. GCMP is the default cipher for 60 GHz STAs and it is also in the process of being deployed in new Suite B use cases. It is not appropriate to deprecate GCMP and leave these new uses without a not-deprecated cipher suite. GCMP, when implemented correctly per the current standard requirements, prevents nonce re-use.
			3. Ready for Motion.
		2. CID 1148 (PHY):
			1. Consulted with security experts.
			2. REJECTED. Such an AP is not compliant with the standard and should be fixed. There has been limited deployment of SAE in infrastructure BSSs so far, but there has been recent interoperability testing and this identified issue is being addressed at least in some implementations. There does not seem to be sufficient justification to relax the rules for EAPOL-Key protection based on this since it looks likely that implementations get fixed before larger scale deployment.
			3. Ready for Motion.
		3. CID 1539 (PHY):
			1. Consulted with security experts.
			2. ACCEPTED.
			3. Ready for Motion.
		4. CID 1538 (PHY):
			1. Consulted with security experts.
			2. Agree with the direction they suggested.
			3. One location got missed, though, at P2422.47.
			4. REVISED. At cited paragraph, delete “When using an AEAD cipher and having PTK, this subfield is set to 1.” At 2419.4, 2422.47 and 2428.23, change “Encrypted Key Data = 0” to “Encrypted Key Data = 1 when using an AEAD cipher or 0 otherwise”
			5. Ready for Motion.
		5. CID 1346 (PHY):
			1. Reviewed comment and Figure.
			2. Suggest to just replace the “floating A circle” with the words.
			3. Another suggestion to say this without the “floating A circle” as text below the figure.
			4. Looked at Figure 17-18. General agreement that this seems okay. There are more examples, later. Make the clause 15 Figure look like this.
			5. REVISED. Add an arrow from the higher-up floating A in a circle to the Switch to RX STATE box. This changes the cited Figure to align with Figure 17-18.
			6. Ready for Motion.
		6. CID 1393 (PHY):
			1. Reviewed comment.
			2. Probably fine. Need side-by-side comparison to be sure. Or, change editing instructions to list what is actually changed.
			3. Bring back next time.
	1. **Next call**: Next week, June 1, same time.
	2. **Adjourned 12:00pm ET**.
1. **June 1, 2018 REVmd Telecon – 802.11md**
	1. **Called to order at 10:03 ET** by the TG Chair Dorothy STANLEY (HPE)
	2. **Attendance:** (the following were present at some point during the call).
		1. Dorothy STANLEY (HPE)
		2. Jon ROSDAHL (Qualcomm)
		3. Yujin NOH (Newracom)
		4. Mark HAMILTON (ARRIS/Ruckus)
		5. Chris HANSEN (Peraso)
		6. Emily QI (Intel)
		7. Amelia ANDERSDOTTER (Article 19)
		8. Graham SMITH (SRT)
		9. Carlos CORDIERO (Intel)
		10. Ganesh VENKATESAN (Intel)
		11. Sean COFFEY (Realtek)
		12. Joseph LEVY (InterDigital)
		13. Mike MONTEMURRO (Blackberry)
		14. Menzo WENTINK (Qualcomm)
	3. **Reviewed Patent Policy** and Participation Policy
	4. **Review Agenda** – 11-18/1007r2
		1. <https://mentor.ieee.org/802.11/dcn/18/11-18-1007-02-000m-tgmd-2018-may-june-teleconference-agendas.docx>
		2. Draft Agenda:
2. Call to order, attendance, and patent policy
	1. Call for potentially essential patents: **If anyone in this meeting is personally aware of the holder of any patent claims that are potentially essential to implementation of the proposed standard(s) under consideration by this group and that are not already the subject of an Accepted Letter of Assurance:**

Either speak up now or

ii.      Provide the chair of this group with the identity of the holder(s) of any and all such claims as soon as possible or

iii.      Cause an LOA to be submitted

* 1. Participation Policy: <https://mentor.ieee.org/802-ec/dcn/16/ec-16-0180-05-00EC-ieee-802-participation-slide.pptx>
1. Editor report – Emily QI

a.       Editor report: current status; any updates to <https://mentor.ieee.org/802.11/dcn/17/11-17-0920-09-000m-802-11revmd-editor-s-report.ppt>

b.      Comments received LB 232 are here: <https://mentor.ieee.org/802.11/dcn/18/11-18-0611-03-000m-revmd-wg-ballot-comments.xls> .

Comment resolution.

* 1. Carlos CORDEIRO – DMG CIDs 18/889 (45 mins)
	2. Yujin NOH – 11-18-710 (45 mins)
	3. Ganesh VENKATESAN – 11-18-885 (15 mins)
	4. Emily QI – 11-18-1043 – CID 1486
1. AOB
2. Adjourn
	* 1. No additions/changes made
		2. No objections to the modified agenda
	1. **Editor Report – Emily Qi**
		1. Editor Report in 11-17/920r8
			1. <https://mentor.ieee.org/802.11/dcn/17/11-17-0920-08-000m-802-11revmd-editor-s-report.ppt>
		2. All approved comments reflected in 11-17/0611r4 - <https://mentor.ieee.org/802.11/dcn/18/11-18-0611-04-000m-revmd-wg-ballot-comments.xls>.
		3. Draft D1.1 has been edited and is on the server. Thanks to all contributors.
	2. **Review doc 11-18/889r1 -** Carlos CORDEIRO – DMG CIDs 18/889 (45 mins)
		1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0889-01-000m-resolution-to-some-dmg-related-cids.docx>
		2. Review Submission and identify the changes from what was presented in Warsaw (F2F).
		3. CID 1021, 1030, 1268, 1395, 1276, 1319, 1318, 1320 DMG Comments in Doc
		4. CID 1030 (MAC)
			1. Review Comment
			2. Description of a new “General FST Rules” sub clause proposal.
			3. Review reason for change
			4. Proposed Resolution: CID 1030 (MAC): REVISED (MAC: 2018-06-01 14:22:41Z): Incorporate the text changes in 11-18/0889r1 for CID 1030. These changes generalize the use of Multi-band element as requested.
			5. No objection – Mark Ready for Motion
		5. CID 1268 (MAC)
			1. Review Comment
			2. Discussion on the rationale for rejection.
			3. The acronym “BI” may not always mean “Beacon Interval”. Discussion point 3 seemed to be the strongest point.
			4. Proposed resolution: CID 1268 (MAC): REJECTED (MAC: 2018-06-01 14:33:12Z): BI does not necessarily always mean Beacon Interval. As such, creating an acronym for it will introduce more confusion.

1) The topic of whether define “BI” as a term/acronym in the 802.11 spec was extensively discussed during the development of the 11ad amendment and also in 11mc. It was observed that beacon interval is simply an interval of time (and not a channel access structure), and hence would not be proper to abbreviate it. Hence the reason the term “BI” does not exist.

2) In the case of this particular comment, the subclause number, page and line numbers refer to a field named “BI Duration”. Since this is a field name, it does not infringe the intent in (1)

3) The commenter also refers to another field PAME-BI defined in (9.4.2.92 Advertisement Protocol element). Similar to (2), this is also a field name and does not infringe the intent of (1). Finally, please note that, in this case, “BI” in the field name stands for “BSSID Independent”

* + - 1. Note that if “BI” is used in some places as an acronym.
			2. P1205.10 is a field name
			3. P1222.1 – see BI is defined as “Beacon Interval” and is used throughout the section.
			4. Need to identify the specific locations where “BI” is used as “Beacon Interval” and decide if we should change all the cases or not.
			5. ACTION ITEM #4: Joe LEVY to provide list of potential changes to “BI” that need to be change. (Bring for the 22nd June Telecon).
			6. This comment will need more work.
			7. There is a “Doze BI” that may need discussion later.
			8. Request to contact Joe LEVEY if you have opinion on “Awake BI” and “Doze BI”
		1. CID 1395 (MAC)
			1. Review Comment
			2. Discussion on Antenna ID usage
			3. The field name did not need to be changed.
			4. Proposed resolution: REJECTED (MAC: 2018-06-01 14:51:16Z): A DMG antenna has very different assumptions than other types of antenna, and being clear in uses where a DMG antenna is referenced is helpful to the reader.
			5. No objection – Mark Ready for Motion
		2. CID 1276 (MAC)
			1. Review Comment
			2. Proposed Resolution: CID 1276 (MAC): ACCEPTED (MAC: 2018-06-01 14:54:22Z)
			3. No objection – Mark Ready for Motion
		3. CID 1319 (MAC)
			1. Review Comment
			2. P1836.44 context reviewed.
			3. REJECTED (MAC: 2018-06-01 14:56:09Z): Per D1.0 P1836.44, a DMG Beacon shall set TRN-LEN to 0, because it is part of a Sector Sweep. Also, this is a receiver behavior. There is nothing in the spec that requires a DMG STA to discard (or not) any frame that has TRN appended to it.
			4. No objection – Mark Ready for Motion
		4. Carlos to return on the June 22.
	1. **Review doc 11-18/710r3** - Yujin NOH (45 mins)
		1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0710-03-000m-resolutions-to-txvector-and-rxvector-of-11ah-phy.docx>
		2. The submission provides resolutions to comments related to TXVECTOR and RXVECTOR parameters.
			1. The submission provides resolutions to 8 CIDs:
			1136, 1131, 1132, 1133, 1134, 1135, 1138 and 1139 (PHY)
		3. Review submission description of changes.
		4. Discussion on PREAMBLE\_TYPE change – is Otherwise in the right place?
		5. Review of changes to the table changes.
		6. Completely reviewed each change.
		7. Concern on possible outstanding comment from Adrian STEPHENS, but we should accept the proposed resolutions for the CIDs and address other comments that are not really part of the Comment or the comment resolution.
		8. Check of APEP\_LENGTH –
			1. Discussion on the behaviour.
			2. Does the behaviour cascade from other locations if we remove the references?
			3. There is a proposal for making a change here with the resolution of an different CID (CID 1013), but not here.
			4. There is concern that we may lose the point if we delay the change.
			5. ACTION ITEM #5: Mike MONTEMURRO will note this in the AdHoc Notes of CID 1013
		9. Review P2901 – starting about line 38
			1. Not sure if the this applies to SUB-1G
		10. Discussion on keeping CID 1139 open until we fully resolve the issues.
		11. Yujin will come back on June 22 to resolve the open issues before closing the CIDs.
	2. **Review doc 11-18-885r3** - Ganesh VENKATESAN – (15 mins)
		1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0885-03-000m-resolutions-to-cids-1015-1384-and-1506.docx>
		2. CID 1506 (MAC)
			1. Review comment
			2. Feedback from Carlos ALDANA was received and added to the doc: "When the responder sets ASAP to 0, Fine Timing Measurements frames (and their retransmissions) other than the IFTM shall not be sent outside burst instances. When the responder sets ASAP to 1, Fine Timing Measurements frames (and their retransmissions) shall not be sent outside burst instances "
			3. Proposed Resolution: REVISED: REVISED (MAC: 2018-06-01 15:51:33Z): After the first sentence in the first paragraph of 11.22.6.4, insert: "When the responder sets ASAP to 0, Fine Timing Measurements frames (and their retransmissions) other than the IFTM shall not be sent outside burst instances. When the responder sets ASAP to 1, Fine Timing Measurements frames (and their retransmissions) shall not be sent outside burst instances."
			4. No objection – Mark Ready for Motion
		3. CID 1364 (MAC)
			1. Still working on it.
			2. Discussion needed on RTTOA and if it is correct terminology?
			3. Need more feedback.
			4. This is duplicate of CID 326.
		4. Will add to next Telecon on 22 June.
	3. **Next Call** on 15 June 2018.
	4. **Adjourned 12:00 ET**.
1. **June 15, 2018 REVmd Telecon, 10am -12pm ET – 802.11md**
	1. **Called to order at 10:03 ET** by the TG Chair Dorothy Stanley (HPE)
	2. **Attendance (**the following were present at some point during the call).:
		1. Dorothy STANLEY (HPE)
		2. Mark HAMILTON (ARRIS/Ruckus)
		3. Sean COFFEY (Realtek)
		4. Guido HIETRZ (Ericsson)
		5. Mark RISON (Samsung)
		6. Yujin NOH (Newracom)
		7. Edward AU (Huawei)
		8. Yunsong YANG (Huawei)
		9. Ganesh VENKATESAN (Intel)
		10. Liwen CHU (Marvell)
		11. Mike MONTEMURRO (Blackberry)
	3. **Reviewed Patent Policy and Participation Policy**
	4. **Review Agenda:**

* + 1. <https://mentor.ieee.org/802.11/dcn/18/11-18-1007-04-000m-tgmd-2018-may-june-teleconference-agendas.docx>
		2. Draft Agenda:

1. Call to order, attendance, and patent policy

a. Call for potentially essential patents: **If anyone in this meeting is personally aware of the holder of any patent claims that are potentially essential to implementation of the proposed standard(s) under consideration by this group and that are not already the subject of an Accepted Letter of Assurance:**

i. Either speak up now or

ii. Provide the chair of this group with the identity of the holder(s) of any and all such claims as soon as possible or

iii. Cause an LOA to be submitted

b. Participation Policy <https://mentor.ieee.org/802-ec/dcn/16/ec-16-0180-05-00EC-ieee-802-participation-slide.pptx>

2. Editor report – Emily QI – not present today, no report (Edward joined later, with a brief report)

a. Editor report document: <https://mentor.ieee.org/802.11/dcn/17/11-17-0920-09-000m-802-11revmd-editor-s-report.ppt>

b. Comments received on LB 232 are here: <https://mentor.ieee.org/802.11/dcn/18/11-18-0611-04-000m-revmd-wg-ballot-comments.xls>

3. Comment resolution.

a.      Guido HIERTZ – 11-18-810, CID 1195 (40 mins)

b.      Update: Yujin NOH – 11-18-710 (10 mins)- CID 1139 and possibly 1013

c.      Robert STACEY – 11-18-702 (40 mins)

d.      Ganesh VENKATESAN – 11-18-885 (15 mins)

4. AOB

5. Adjourn

* + 1. Reordering, due to presenter availability on the call. Otherwise, no objection to the proposed agenda that was in the 11-18/1007r4
	1. **Review Submission 11-18/810r0** – CID 1195 (MAC): EDCA TXOPs – Guido HIERTZ:
		1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0810-00-000m-cid-1195.pptx>:
			1. Review of current TXOP Limit rules: independent queues for each Access Category – each AC is an independent actor. Why, and is this still useful in modern design?
			2. Reviewed results of current rules on an example TX of three frames at three ACs. If sent with independent contention, there is twice as much backoff time compared to a continued TXOP – and this gets much worse if the channel is loaded. Conclusion is that it is better to make best use of a TXOP, once one is obtained.
			3. Proposal is to allow frames from other ACs to be TX’d, once a TXOP is obtained.
			4. Some new rules will need to be considered with this, to keep reasonable sharing (and not use this to “cheat”). There are many issues with existing implementations of QoS using UP, DSCP, etc. Can increase medium efficiency.
			5. Methods of new rules for further TX in the TXOP are TBD; some options on slide 21.
		2. Comments:
		3. Goal makes sense – 1) Need to have some restriction on implementations: must transmit first frame at the AC used for channel access; 2) channel access rules are re-specified in Wi-Fi Alliance, with some indirect testing; this would need to be changed there, and would impact that testing; 3) need to sort out how this affects Admission Control.
		4. Noted that ETSI EN 301 893 allows sending following frames in TXOP, but only from higher priority queues.
		5. Good with direction. Comments: Slide 18: 802.11ah also has a similar exception. Raises the question of whether this would apply to all MAC/PHYs (including legacy) or only new amendments? Intention is to apply to everything, including legacy. Slide 15: proposed changes need editorial correction to the text that remains – perhaps delete the entire sentence, not just the fragment shown. Slide 21: Noted that existing exceptions are left to implementation choice, but see the issue of how to balance.
		6. Leaning in support of this, but there need to be restrictions to prevent this being abused to make priority access meaningless.
		7. Will consider further in July.
	2. **Editor’s report:**
		1. D1.1 is posted in Editor’s area.
		2. Working on D1.2, rolling in 802.11aj. Targeting to have it ready by San Diego meeting.
	3. **Review Submission 11-18/710r4** – 11ah CIDs (PHY) – Yujin NOH:
		1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0710-04-000m-resolutions-to-txvector-and-rxvector-of-11ah-phy.docx>
		2. CIDs covered: 1136, 1131, 1132, 1133, 1134 and 1135 (PHY). CIDs 1138 and 1139 have been moved to a separate document.
		3. From prior discussion, have agreed that some parameters can simply be removed. However, there are cascade effects that need further explanation and clarification.
		4. The document is believed to be ready, now, but perhaps needs further review and comment, with these updates.
		5. Comments:
		6. Agreed with Adrian’s comment that it doesn’t make sense to list parameters where the MAC has no degree of freedom (PREAMBLE\_TYPE on Page 9, for example). Response: Removing such parameters makes it harder for implementers to find all the rules buried in text elsewhere; prefer to keep these to help avoid confusion. Counter response: There are many rules in the text, surely implementers will understand and follow those, so these are not that unusual.
			1. Straw Poll: A) Keep the row for “FORMAT is S1G\_DUP\_2M”; B) Delete the row.
			2. A) 3 B) 2 Abstain) 4
			3. Will keep the text for now, as proposed in the posted document.
		7. What is the plan for (for example, Page 12, on “EXPANSION\_MAT”) Adrian’s comment about a possible need for “O for SU, M for MU”? S1G\_DUP\_2M is not used for MU, so no issue with “O”. What about the previous row (FORMAT is S1G), then? The meaning of “MU” might cover the SU usage, but might make this mandatory for SU, which is incorrect. Seems to need further investigation.
		8. What about the comment on the “LENGTH” parameter (page 20)? This also needs further investigation.
		9. Will revisit this document at the San Diego session, early in the week. Will put together with 1062 on the other CIDs
	4. **Review Submission 11-18/885r5** – Ganesh VENKATESAN:
		1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0885-05-000m-resolutions-to-cids-1015-1384-and-1506.docx>
		2. CID 1015 (MAC): Corrected resolution, per Mark Rison’s previous comment that some information was lost. Request to re-order the sentences, and clarify the Editor’s instruction, otherwise okay with the resolution. Will post as 11-18/885r6.
			1. Revised. Incorporate the changes as shown in 11-18/0885r6 for CID 1015. These changes address the concern raised in the comment.
			2. Ready for Motion.
		3. CID 1384 (MAC): Agree with Mark Rison’s previously made comment that more specific references are needed. But those references are already there in the Draft.
			1. Rejected. 11.22.16.3.7 discusses GCR Block Ack and has a reference to 10.25.8. (P2185L50).
			2. Ready for Motion.
			3. (If any concern upon further review, bring that up in July session.)
		4. CID 1506 (MAC): Have clarified in response to Mark Rison’s email comments. Editorial fix to add “the” and “field” around “ASAP” in two locations, and the ‘s’ in “Fine Timing Measurements”. Agreed that retransmissions can occur, so the parenthetical is okay. (Need to confirm at July meeting that no further concern is found about the ability to retransmit an FTM.)
			1. Revised. Incorporate the text changes shown in 11-18/885r6 for CID 1506. This makes changes in the direction suggested by the commenter.
			2. Ready for Motion.
		5. CID 1145 (MAC): Still waiting for more discussion about market need and how well this works with 1 MHz bandwidth. Believe such a discussion is being prepared in a submission. Note that the position accuracy would be lower, but that satisfies different use cases for this PHY.
			1. Reviewed the proposed changes, in detail, in preparation for the above submission.
			2. Editorial cleanup.
			3. No further comment on these proposed changes, assuming we proceed with the comment.
		6. CID 1364 (MAC): This still needs further discussion with the commenter, per the discussion that happened on CID 326 on the last ballot.
	5. **Next call**: Next week, on June 22, 2018, 10am ET.
	6. **Adjourned** 12:00pm ET.
1. **June 22, 2018 REVmd Telecon, 10am -12pm ET – 802.11md**
	1. **Called to order at 10:02 ET** by the TG Chair Dorothy Stanley (HPE)
	2. **Attendance (**the following were present at some point during the call).:
		1. Dorothy STANLEY (HPE)
		2. Mark HAMILTON (ARRIS/Ruckus)
		3. Mike MONTEMURRO (Blackberry)
		4. Carlos CORDIERO (Intel)
		5. Osama ABOUL-MAGD (Huawei)
		6. Mark RISON (Samsung)
		7. Dejan DUMIC (Methods2Business)
		8. Edward AU (Huawei)
		9. Marleen Boonen (Methods2Business)
		10. Matthew FISCHER (Broadcom)
		11. Ian SHERLOCK (Texas Instruments)
		12. Joe LEVY (Interdigital)
		13. Liwen CHU (Marvell)
	3. **Reviewed Patent Policy and Participation Policy**
	4. **Review Agenda:**

Call to order, attendance, and patent policy

a.       Call for potentially essential patents: **If anyone in this meeting is personally aware of the holder of any patent claims that are potentially essential to implementation of the proposed standard(s) under consideration by this group and that are not already the subject of an Accepted Letter of Assurance:**

                                                               i.      Either speak up now or

                                                             ii.      Provide the chair of this group with the identity of the holder(s) of any and all such claims as soon as possible or

                                                           iii.      Cause an LOA to be submitted

b.      <https://mentor.ieee.org/802-ec/dcn/16/ec-16-0180-05-00EC-ieee-802-participation-slide.pptx>

2.       Editor report – Emily QI

a.       Editor report: current status; any updates to <https://mentor.ieee.org/802.11/dcn/17/11-17-0920-09-000m-802-11revmd-editor-s-report.ppt>

b.      Comments received LB 232 are here: <https://mentor.ieee.org/802.11/dcn/18/11-18-0611-04-000m-revmd-wg-ballot-comments.xls> .

3.       Comment resolution

1. Carlos CORDEIRO – DMG CIDs 18/889 CIDs 1318, 1320 (10 mins)
2. Joseph LEVY – CID 1268 (5 mins)
3. Matthew FISCHER – 11-17-1192 ESP comment resolution (40 mins)
4. Additional 11ah items – 60 mins
	1. **Editor Report**
		1. The editors are working on the integration of IEEE 802.11aj-2018 into the draft.
		2. There are some issues with cross-referencing that need to be sorted out.
		3. The draft will be made available for internal review before the beginning of the San Diego meeting.
	2. **Review Submission document 11-18/889r1 – Carlos Cordiero (Intel)**
		1. CID 1318 (MAC): No objection to
			1. CID 1318 (MAC): REJECTED (MAC: 2018-06-22 14:13:35Z): Per discussion in 11-18/0889r1 (https://mentor.ieee.org/802.11/dcn/18/11-18-0889-01-000m-resolution-to-some-dmg-related-cids.docx), the information needed to determine the beacon interval timing for fragmented TXSS are available to a non-AP STA.
			2. Ready for motion.
		2. CID 1320 (MAC): The proposal to rejected in TGay. It is a new feature and was considered and rejected in that group.
			1. There were many details to work out and the proponents decided not to pursue at this time.
			2. There is a concern that the comment resolution does not address the issue with a STA maintaining multiple NAVs.
			3. The commenter provides a solution but the solution is incomplete. This comment was marked submission required.
			4. The comment is not identifying a problem. Its noting that the review is mixed.
			5. CID 1320 (MAC): REJECTED (MAC: 2018-06-22 14:19:04Z): The commenter is proposing a new spatial reuse feature be added. This is being done without providing analysis or simulations of the implications of this proposal such as how it impacts legacy devices, for how long the new transmission can last, what if multiple STAs perform the same behavior, to name a few. This subject was discussed in TGay, and decided to not pursue without these details being understood.
			6. Ready for motion.
		3. A typo was identified in Table 20-15
			1. This fix will be handled outside of the comment resolutions.
			2. The Chair will prepare a separate motion to approve the fix to Table 20-15.
	3. **Review submission of document 11-18/1081r0 – Joe Levy (Interdigital)**
		1. The document provides a resolution to CID 1268
		2. Carlos Cordiero reviewed the changes.
		3. Mark Hamilton will discuss the proposed text changes with Joe Levy offline.
		4. CID 1268 (MAC): REVISED (MAC: 2018-06-22 14:38:41Z): Incorporate the proposed text changes in 11-18/1081r0 (https://mentor.ieee.org/802.11/dcn/18/11-18-1081-00-000m-proposed-resolution-for-cid-1268.docx). These changes resolve the comment in the direction suggested by the commenter.
	4. **Review submission of document 11-17/1192r21 – Matthew Fischer (Broadcom)**
		1. The document was reviewed during the comment collection process and has changed to address comments received during LB232.
		2. This document proposes resolutions for MAC CIDs 1062, 1063, 1064, 1065, 1149, 1150, 1151, 1152, 1153, 1154, 1155, 1156, 1157, 1158, 1159, 1160, 1368, 1420.
		3. This document proposes resolutions for PHY CIDs 1421, 1422, 1423, 1424, 1427, 1429.
		4. The R.7 denominator equation modification needs to include protection as well.
		5. There are a number of variants on the air transmission. An additional term could be included to take into account additional overhead.
		6. Prepare tabs of MAC CIDS for a single motion in July
		7. Prepare a tab of PHY CIDs for a single motion in July
	5. **Review submission of document 11-18/1099r0 – Dejan Dumic (Methods2Business)**
		1. The Editor will take a look at the TIM element and propose changes to clearly mark optional fields.
		2. Mark Hamilton will work offline with Dejan Dumic to clean up the TIM specification.
		3. The proposed change to the description of the TWT subfield is a replacement. This would be a technical change. Accept the change and Mark Hamilton and Dejan Dumic will work on proposed text changes.
		4. Note to the Editor to look into P1307 of D1.1. Figure 9-672 and Table 9-289 are overlapping.
		5. Any field that has a CRC does not follow the bit convention. Clause 9.2.2 in the third paragraphs describes the conventions. Assign to Matthew Fischer for review and propose clarifying text. Comment on line 9.
		6. Comment on line 10 is the same as the comment on line 9. Assign to Matthew Fischer.
		7. A submission is required to modify the STACK frame format and the BAT frame format. (comments on lines 11 and 12).
		8. For line 13 and 14 of the spreadsheet, further text changes are required. Mark Rison and Mark Hamilton will work with Dejan Dumic to propose text changes.
		9. For line 15, the comment is assigned to Matthew Fischer. The Partial AIDs are insufficient.
		10. For line 16 and 17, the comments are assigned to Matthew Fischer.
		11. For line 18, the GCMP header was not defined for encapsulated PV1 frames. GCMP encapsulation was not defined because 11ah devices were considered to be low power. The comment is assigned to Dan Harkins for review.
		12. TGmd will consider these comments in the July meeting or potentially at the 11md adhoc meeting at the end of July.
	6. **Review submission of document 11-18/1100r0 – Dejan Dumic (Methods2Business)**
		1. The TXOP limits need to adjusted to account for TGah. A submission with text changes would be required. Mark Hamilton will work with Dejan Dumic on proposed text changes.
	7. **Meeting adjourned at 11:58.**

**References:**

May 25th Telecon:

1. <https://mentor.ieee.org/802.11/dcn/18/11-18-1007-01-000m-tgmd-2018-may-june-teleconference-agendas.docx>
2. <https://mentor.ieee.org/802-ec/dcn/16/ec-16-0180-05-00EC-ieee-802-participation-slide.pptx>
3. <https://mentor.ieee.org/802.11/dcn/17/11-17-0920-09-000m-802-11revmd-editor-s-report.ppt>
4. <https://mentor.ieee.org/802.11/dcn/18/11-18-0611-03-000m-revmd-wg-ballot-comments.xls>
5. <https://mentor.ieee.org/802.11/dcn/17/11-17-0920-09-000m-802-11revmd-editor-s-report.ppt>
6. <https://mentor.ieee.org/802.11/dcn/18/11-18-0619-00-000m-revmd-editor2-lb232-comments.xlsx>
7. <https://mentor.ieee.org/802.11/dcn/18/11-18-0899-01-000m-lb232-comment-resolutions-mmontemurro.doc>

June 1st Telecon:

1. <https://mentor.ieee.org/802.11/dcn/18/11-18-1007-02-000m-tgmd-2018-may-june-teleconference-agendas.docx>
2. <https://mentor.ieee.org/802.11/dcn/17/11-17-0920-08-000m-802-11revmd-editor-s-report.ppt>
3. <https://mentor.ieee.org/802.11/dcn/18/11-18-0611-04-000m-revmd-wg-ballot-comments.xls>.
4. <https://mentor.ieee.org/802.11/dcn/18/11-18-0889-01-000m-resolution-to-some-dmg-related-cids.docx>
5. <https://mentor.ieee.org/802.11/dcn/18/11-18-0710-03-000m-resolutions-to-txvector-and-rxvector-of-11ah-phy.docx>
6. <https://mentor.ieee.org/802.11/dcn/18/11-18-0885-03-000m-resolutions-to-cids-1015-1384-and-1506.docx>

June 15th Telecon:

1. <https://mentor.ieee.org/802.11/dcn/18/11-18-1007-04-000m-tgmd-2018-may-june-teleconference-agendas.docx>
2. <https://mentor.ieee.org/802.11/dcn/17/11-17-0920-09-000m-802-11revmd-editor-s-report.ppt>
3. <https://mentor.ieee.org/802.11/dcn/18/11-18-0611-04-000m-revmd-wg-ballot-comments.xls>.
4. <https://mentor.ieee.org/802.11/dcn/18/11-18-0810-00-000m-cid-1195.pptx>
5. <https://mentor.ieee.org/802.11/dcn/18/11-18-0710-04-000m-resolutions-to-txvector-and-rxvector-of-11ah-phy.docx>
6. <https://mentor.ieee.org/802.11/dcn/18/11-18-0885-05-000m-resolutions-to-cids-1015-1384-and-1506.docx>

June 22nd Telecon:

1. <https://mentor.ieee.org/802.11/dcn/18/11-18-1007-06-000m-tgmd-2018-may-june-teleconference-agendas.docx>
2. <https://mentor.ieee.org/802.11/dcn/18/11-18-0889-01-000m-resolution-to-some-dmg-related-cids.docx>
3. <https://mentor.ieee.org/802.11/dcn/18/11-18-1081-00-000m-proposed-resolution-for-cid-1268.docx>
4. <https://mentor.ieee.org/802.11/dcn/17/11-17-1192-21-000m-cr-esp.docx>
5. <https://mentor.ieee.org/802.11/dcn/18/11-18-1099-00-000m-11ah-text-issues.xls>
6. <https://mentor.ieee.org/802.11/dcn/18/11-18-1100-00-000m-identified-issues-dg.xls>