IEEE P802.11
Wireless LANs

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| Minutes REVmd - May 2018- Warsaw |
| Date: 2018-05-10 |
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Abstract

Minutes for the TGmd meetings (REVmd) for the 802 Wireless Interim held May 7-10, 2018 in Warsaw, Poland.

1.**0 802.11md -- REVmd – 802W Interim – Warsaw, Monday PM1 15:30 – 17:30**

* 1. **Called to order** by the chair, Dorothy STANLEY (HPE) at 1:32pm
	2. **Review Patent Policy**
		1. No issues noted
	3. **Review Participation Policy**
	4. **Review Agenda for the week:**
		1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0625-01-000m-2018-may-tgmd-agenda.pptx>

Monday PM1

1. Chair’s Welcome, Policy & patent reminder
2. Approve agenda
3. Status, Review of Objectives
4. Editor Report
5. Vice Chair election, Secretary confirmation
6. Emily QI – 11-18-658 – non-trivial editorial CIDs
7. Edward AU – Editor2 CIDs
8. PHY CIDs – 1552, 1324, 1264, 1188, 1004, 1552
9. Sigurd S 11-18-701 CIDs 1359, 1388

Tuesday PM1

1. Obsolete CIDs (see next slide);
2. Menzo PCF deletion clean-up 11-18-747
3. 11-17-1192 – Matthew Fischer
4. 11-17-1807 – Nehru Bhandaru
5. 11-17/0879 – Youhan KIM
6. 11-18-709, 710 Nujin NOH

Wednesday PM1

1. Mark HAMILTON - MAC CID1382; 11-18-669r1 with CIDs 1394, 1369, 1397, 1354
2. James LEPP - 1189, 1190 - 11-18-871, 872
3. Multiple BSSID CIDs 11-18-674, 675
4. Robert STACEY – 11-18-702

Wednesday PM2

1. Motions
2. ISO/IEC JRC1 SC6 Comments
3. 18/865r0: CID 1066 (Beacon Protection)
4. 18/867r0: CID 1055, 1056 and 1057
5. Guido HIERTZ – 11-18-810, CID 1195

Thursday PM1

1. Motions
2. Mark HAMILTON – CIDs 1586, 1556, 1384, 1315, 1192, 1286
3. Roger MARKS – CID 1533
Plans for May 2018 – July 2018
4. Adjourn
	* 1. Reviewed changes made to the agenda. They are reflected in R2
		2. Emily would like to add a document for Wednesday, but would add a CID for discussion
		3. **Motion #W1**:
			1. Move to approve Agenda in 11-18/625r2 <<https://mentor.ieee.org/802.11/dcn/13/11-13-0652-02-000m-some-more-lb193-resolutions.doc> >.
			2. Moved: Emily QI 2nd: Mark HAMILTON
			3. Results: #W1: No objection to approving the Agenda – Motion Passes
	1. **Review REVmd Status**
		1. Next Amendments to roll-in is 11aj and 11ak with D2.0 coming out of Sept.
	2. **Editor Report** – Emily QI
		1. Review doc: 11-17/920r9
		2. <https://mentor.ieee.org/802.11/dcn/17/11-17-0920-09-000m-802-11revmd-editor-s-report.ppt>
		3. Review report
		4. LB232 Comment Ad-Hoc Group Status:
		5. 
		6. Comment resolution is progressing.
	3. **Vice Chair election, Secretary confirmation**
		1. Only 2 nominations for Vice Chair -- Mark HAMILTON and Michael MONTEMURRO
		2. Only 1 candidate for Secretary – Jon ROSDAHL
		3. **Motion #W2**: Move to Elect Mark HAMILTON and Michael MONTEMURRO as Vice Chair and confirm Jon ROSDAHL as Secretary.
		4. Moved Graham SMITH 2nd: Edward AU
		5. **Results #W2**: 13-0-2 – Motion passes
	4. **Review doc 11-18-658** – non-trivial editorial CIDs - Emily QI –
		1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0658-05-000m-lb232-proposed-resolutions-for-editor-ad-hoc.doc>
		2. Changes created today will be in R6.
		3. CID 1562 (EDITOR)
			1. Review comment
			2. Discussion on the value of moving or changing.
			3. The value of the material was agreed, but where it goes is debatal
			4. Clause 4 is an overview, would like to not make a change.
			5. Straw Poll
				1. A – leave text
				2. B – Move to clause 12
				3. C – No Opinions
				4. Results: 9 A 3 B 2 C
			6. Proposed Resolution: Reject The Task Group discussed moving the material and by a strawpoll result 9 (leave text), 3 (Move to Cluase 12) or 2 No Opinion, showed the preference to leave the materials where they are. The Materials in clause 4 are more detailed than other subclause; The Material is accurate.
			7. No Objection – Mark ready for Motion
		4. CID 1487 (Editor)
			1. Review comment history
			2. Related from CID 204
			3. Review comment
			4. Review history of the comments
			5. Should we keep the DMG modifier?
			6. Proposal is to delete “DMG AP” definition, but discussion on BSS modifiers. Discussion on the variety of modifiers that we are not removing. We should remove all the other modifiers to keep consistent.
			7. No objection to remove DMG AP.
			8. If we delete some there was some objection, for removal all or putting in all there was apparently less objectionable.
			9. Straw Poll delete “DMG BSS”
				1. 3 yes, 5 No, 5 abstain.
			10. Proposed Resolution: Delete “DMG AP” definition.

Note to commenter: the straw poll result for deletion of “DMG BSS” is: 3:5:5. Therefore, “DMG BSS” definition stays.

Note to commenter: VHT BSS is defined At 186.56. No need for a new definition. We don’t need HT AP definition. By convention, an adjective for a capability, when used with "AP", "STA" or "BSS" is assumed to be understood by the reader without an explicit definition, unless there is some noted ambiguity. Therefore, the definition of "HT AP" is not needed.

* + - 1. No Objection - Mark Ready for Motion
		1. CID 1588 (EDITOR)
			1. Review comment
			2. Proposed change is not sufficient for Editor to take action.
			3. Review the proposed change and discussion on where to move the paragraph was implied was reviewed.
			4. Review proposed revised change.
			5. The kind of information that goes in a specific clause, and we should not duplicate them in clause 9.
			6. The type of information should be keep in the clauses where things are type cast.
			7. Proposed Resolution: Revised.

Change the two sentences about mesh AIDs to, "In mesh BSS operation, the AID field is a value that represents the 16-bit ID of a neighbor peer mesh STA, assigned during mesh peering."

Change

“A non-DMG and non-S1G STA assigns the value of the AID in the range of 1 to 2007; the 5 MSBs of the AID field are reserved. An S1G STA assigns the value of the AID in the range of 1 to 8191; the 3 MSBs
of the AID field are reserved.

A DMG STA assigns the value of the AID field in the range 1 to 254. The value 255 is reserved as the
broadcast AID, and the value 0 corresponds to the AP or PCP. The 8 MSBs of the AID field are reserved.”

To :

“The value of the AID field for a non-DMG and non-S1G STA is in the range of 1 to 2007, and the 5 MSBs of the AID field are reserved.

The value of the AID field for an S1G STA is in the range of 1 to 8191, and the 3 MSBs of the AID field are reserved.

The value of the AID field for A DMG STA is in the range 1 to 254. The value 255 is reserved as the
broadcast AID, and the value 0 corresponds to the AP or PCP. The 8 MSBs of the AID field are reserved.”

* + - 1. Straw Poll in support of proposed resolution:
			2. Results is 10-2-5
		1. CID 1595 (EDITOR)
			1. Still planning on discussing in future.
		2. CID 1086 (EDITOR) revisit
			1. Review comment history
			2. Comment from (May) Comment from Mark RISON: The problem is that now if the spec says "MAC header" it's not clear whether that excludes "PV1 MAC header".
			3. Response: Yes, it is clear. “MAC Header” means original “MAC header” and doc not include the PV1 MAC Header unless it says so.
			4. No change to the resolution.
		3. CID 1389 (EDITOR)
			1. Review comment
			2. Review resolution – no change to resolution.
	1. **Review doc 11-18/0897r0** - Editor2 CIDs
		1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0897-00-000m-comment-resolution-on-cids-1038-1589-1113-and-1111.docx>
		2. CID 1038 (EDITOR2)
			1. Review history of CID and history of needing a new document.
			2. The new file is 11-12/751r1, but it was in the 11ad document group. Need to get a new document in the 11md document for consideration.
		3. CID 1589 (EDITOR2)
			1. Review comment
			2. Review proposed changes
			3. Proposed to accept the direction of the comment.
			4. Table 20-11 and 20-13 we can replace the Number of Bit column and the starting bit column with a Bit Column
			5. For Table 23-16 – remove the parenthetic bit numbers
			6. The bit values seem odd, so the “Total # bits” row is thought not to be needed. There is text that calls out the bit numbers.
			7. Concern with the changes to the description and the table in order to make consistent.
			8. Proposed Resolution: Revised

Delete the "Number of bits" column in Table 21-12, 23-11, 23-13, 23-14, and 23-18.

For Table 20-11, replace the Number of bits column and the Starting bit column with Bit column.

For Table 20-13, replace the Number of bits column and the Start bit column with Bit column.

In 23-16, delete the parentheticals, throughout, and delete the row “Total # bits”.

* + - 1. No Objection – Mark ready for Motion.
		1. CID 1113 (EDITOR2)
			1. Review Comment
			2. Discussion on the use of “Destination” and “Source” and the option of combining the sentences.
			3. Proposed Resolution: Revised

At 1791.14 to 1791.19, please replace the two paragraphs wit the following:

The intended receiver of a VHT NDP is identified by the RA of the immediately preceding VHT NDP Announcement frame.

The transmitter of a VHT NDP is identified by the TA of the immediately preceding VHT NDP Announcement frame.

At 1791.47 to 1791.52, please replace the two paragraphs with the following:

“The intended receiver of a S1G NDP is identified by the RA of the immediately preceding S1G NDP Announcement frame.

The transmitter of a S1G NDP is identified by the TA of the immediately preceding S1G NDP Announcement frame.”

* + - 1. No objection – Mark Ready for Motion
		1. CID 1111 (Editor2)
			1. Review comment
			2. Discussion on the proposed change
			3. Proposed Resolution: Replace “S1G NDP Sounding frame” with “S1G NDP” at 1791.20, 1791.23, and 1791.24.
			4. No objection – Mark Ready for Motion
	1. **Review doc 11-18/701r0** - Sigurd S. –
		1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0701-00-000m-cids-1388-and-1359.docx>
		2. CID 1359 (PHY)
			1. Review Comment
			2. Review proposed change
			3. Discussion on the value of the NOTE being in the diagram as apposed to outside the diagram.
			4. Suggestion to add the new sentence as an addition
			5. The NOTE should say that an STBC Block is present even when not used.
			6. Proposed resolution: Change the paragraph starting at line 38, page 2754 as shown in 802.11-18/0701r0.
			7. More fine tuning to be done.
		3. CID 1388 (PHY)
			1. Review Comment
			2. Review discussion
			3. Proposed resolution: Reject. This statement is needed to guarantee consistency with the mandatory requirements of VHT STAs.
			4. No objection – Mark ready for Motion
	2. Recess at 3:33pm
1. **802.11md -- REVmd – 802W Interim – Warsaw,** Tuesday PM1 – May 8, 2018
	1. Thanks to Mark HAMILTON for minutes for this meeting.
	2. Call to order, 13:30 by the Chair, Dorothy STANLEY. - Chair’s welcome.
	3. Review Patent slides. No response. Participation slide review. No questions.
	4. Agenda review (11-18/0625r3):
		1. <https://mentor.ieee.org/802.11/dcn/13/11-13-0652-03-000m-some-more-lb193-resolutions.doc>
		2. Tuesday PM1:
2. Obsolete CIDs; PCF deletion clean-up 11-18-747
3. 11-17-1807 – Nehru BHANDARU
4. 11-17-0879 – Youhan KIM
5. 11-18-709, 710 Nujin NOH
6. PHY CIDs 1552, 1324, 1264, 1188, 1004, 1552
7. Will check status of the Obsolete CIDs (1377, 1378, 1006, 1410, 1411, 1412, 1504, 1445), plus review of 11-18/747 (Menzo WENTINK)
	* 1. No objections to the proposed agenda.
	1. **Review Doc 11-18/0747r0** - PCF deletion clean-up, Menzo WENTINK (Qualcomm):
		1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0747-00-000m-pcf-deletion-cleanup.docx>
		2. We agreed previously to remove PCF (in 11-17/1519r4), but some pieces got left. This submission removes those. For example, CFP and CP acronym, “Contention Free”, and so on.
		3. Are we sure all these mentions of CFP in the context of HCF are okay to remove? This isn’t losing text about CAP, is it? After reviewing, decided this is okay. There used to be CAPs during a CFP, but they are separate concepts, and we’re keeping CAP (just not within a CFP).
		4. Looked at the change at 1578.1. We need to keep the part of this sentence about an HC starting a TXOP (aka CAP).
		5. Looked at the PICS change to delete PC12.6. If we remove PC12.6, the Editor will have to renumber the following one(s) and update all references. Same on PC12.4. Maybe we should change these to “Reserved” instead (like PC11.10) as a simpler and less error-prone change.
		6. Menzo will upload an r1 with those changes.
		7. Will consider a motion on this tomorrow.
	2. **Review of Obsolete CIDs:**
		1. **HT-delayed BA and PSMP:**
			1. From Fort Lauderdale ad hoc, Mike was to contact Yongho for clarification on 11ah use. This is still pending.
		2. **WEP (11-18/652r1):**
			1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0652-01-000m-resolution-for-wep-tkip-removal-cids.docx>
			2. We will review the document today, and give everyone time to think about it, for action in July.
			3. CIDs 1006, 1233, 1234, 1410, 1411, AND 1323.
			4. Reviewed history of discussion on this in Berlin and Orlando, to D0.1.
			5. Previous (old) versions of 802.11 are available from the IEEE, so implementers can still find it, even if we delete it.
			6. **Straw Poll** (Chicago rules):

A) Delete text related to WEP, TIKIP and ARC4.

B) Delete WEP text only, make TKIP Obsolete.

C) Delete WEP and remove TKIP as a pairwise cipher (continue supporting TKIP as a group cipher).

D) Do nothing

* + - * 1. Discussion:

Don’t think we can remove TKIP for pairwise cipher.

* + - * 1. **Straw Poll Results:** A) 1 B) 10 C) 8 D) 11
			1. **Another Straw Poll** (pick one):

A) Delete WEP text only, make TKIP Obsolete.

B) Delete WEP and remove TKIP as a pairwise cipher (continue supporting TKIP as a group cipher).

C) Do nothing

* + - * 1. **Another Straw Poll Results:** A) 6 B) 4 C) 12
			1. **Straw Poll #3:** Mark TKIP as Obsolete?
				1. **Straw Poll #3 Results:** Y: 6 N: 12
			2. Therefore, resolve these 6 CIDs with Rejection, that we considered and decided to make no change.
			3. Will resolve another CID (in PHY) about a WEP MIB variable, with the boilerplate answer about not maintaining a deprecated feature.
		1. **Dual Beacon and Dual CTS**
			1. (CID 1412):
			2. Dorothy has sent this to the reflector, and gotten no response. She’ll refresh on the reflector, and we’ll take action later.
		2. **STKSA - See 11-18/480r3**
			1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0480-03-000m-peerkey-deletion-cleanup.docx>
			2. (CID 1504 (MAC)):
				1. Menzo has updated to 11-18/480r3. The database currently has instruction to incorporate 480r1; will update to 480r3.
				2. Menzo will email the reflector noting the update.
			3. CID 1237 (PHY)
				1. CID is related.
				2. Both CIDs will be updated to reference 11-18/480r3 and repost to a new motion tab.
				3. Ready for motion later this week.
			4. CID 1445 (Operating Classes):
				1. Peter E is investigating this, and is not here this week. We’ll address on a teleconference.
	1. **Review document 11-17/1807r8** – Nehru BHANDARU:
		1. <https://mentor.ieee.org/802.11/dcn/17/11-17-1807-08-000m-defense-against-multi-channel-mitm-attacks-via-operating-channel-validation.docx>
		2. This is updated to address comments made last time.
		3. Changes are outlined at the start of the document.
		4. There is a change to require an AP to disassociate any non-AP STA that does not do an SA query after a channel switch. This needs a time limit requirement on the AP doing this. Also, shouldn’t the AP deauth (not disassoc) such a non-AP STA? Separately, should this whole requirement be a “should” and not a “shall”?
		5. Noted that we are running out of bits in the RSN Capabilities subfield in RSNE. We need to be careful about how we use this limited resource.
		6. Will ask Robert to check if ANA controls this allocation.
		7. Nehru will consider these comments off-line, and bring this back.
	2. **Review doc 11-17/0879r0** – Youhan KIM:
		1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0879-00-000m-d1-0-vht-related-cids.docx>
		2. CID 1374 (MAC):
			1. Propose rejecting this. When a VHT STA sends an RTS frame to an 11a or 11n STA, then Signalling TA should not be used.
			2. Discussion: But the comment is to add “to a VHT STA” which seems to be correct.
			3. Will reconsider and bring back.
		3. CID 1127 (MAC):
			1. Agree there are errors in the cited text.
			2. Proposes text changes to combine the non-S1G and S1G text into one section and simplify and correct the details. Reviewed these changes.
			3. Proposed Resolution: REVISED. Incorporate the changes as shown in https://mentor.ieee.org/802.11/dcn/18/11-18-0879-01-000m-d1-0-vht-related-cids.docx.
			4. Mark Ready for motion.
		4. CID 1339 (MAC):
			1. Agree with the commenter, but noted that other parameters are also missing. It’s not practical to list them all.
			2. Proposes text changes to instead add “such as” language, and add HT-MCS as well as the codebook.
			3. Not sure about using “assume”, as that is personification.
			4. With that change, agreed. Ready for motion:
			5. The commenter is correct that there are parameters other than the ones listed (rate and grouping) which affect the duration of the expected frame. However, codebook is not the only missing parameter. For example, PPDU type (non-HT, HT, VHT) and PPDU bandwidth also impact the duration of the expected frame. It is not practical to list out all parameters in the standard.
			6. Proposed text update in <https://mentor.ieee.org/802.11/dcn/18/11-18-0879-01-000m-d1-0-vht-related-cids.docx> includes the codebook side to the list as suggested by the commenter, but also clarifies that there are other parameters involved.
			7. Instruction to Editor: Implement the proposed text update for CID 1339 in <https://mentor.ieee.org/802.11/dcn/18/11-18-0879-01-000m-d1-0-vht-related-cids.docx>
		5. CID 1331 (PHY):
			1. Reviewed comment.
			2. Proposed Resolution: Accepted.
			3. Mark Ready for motion.
	3. **Review doc 11-18/709r2** – Yujin NOH:
		1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0709-02-000m-resolutions-to-phy-transmit-procedure-of-11ah-phy.docx>
		2. CID 1141 (PHY):
			1. Reviewed comment. Agreed.
			2. Reviewed proposed changes.
			3. Proposed Resolution: Revised. Agreed in principle. Add three figures and descriptions corresponding to NDP CMAC frames. TGm Editor: make changes according to document <https://mentor.ieee.org/802.11/dcn/18/11-18-0709-02-000m-resolutions-to-phy-transmit-procedure-of-11ah-phy.docx> .
			4. Mark Ready for motion.
	4. **Recess until Wednesday PM1** at 3:30pm.
1. **802.11md -- REVmd – 802W Interim – Warsaw** Wednesday PM1, May 9, 2018
	1. Call to order, 13:30 by the Chair, Dorothy STANLEY. - Chair’s welcome.
	2. Review Patent Policy.
		1. No response.
	3. Review Agenda 11-18/625r4
		1. [https://mentor.ieee.org/802.11/dcn/18/11-18-0625-04-000m-2018-may-tgmd-agenda.pptx](https://mentor.ieee.org/802.11/dcn/18/11-18-0625-04-000m-2018-may-tgmd-agenda.pptx%20)
		2. Wednesday PM1
2. 11-18-669r1 with CIDs 1394, 1369, 1397, 1354
3. Mark HAMILTON - MAC CID1382;
4. James LEPP - 1189, 1190 - 11-18-871, 872
5. Multiple BSSID CIDs 11-18-674, 675
6. Robert STACEY – 11-18-702
7. PHY CIDs 1552, 1324, 1264, 1188, 1004, 1552
	* 1. No objection to the agenda plan
	1. Review doc 11-18/669r1, Mark HAMILTON
		1. [https://mentor.ieee.org/802.11/dcn/18/11-18-0669-01-000m-revmd-mac-comments-assigned-to-HAMILTON.docx](https://mentor.ieee.org/802.11/dcn/18/11-18-0669-01-000m-revmd-mac-comments-assigned-to-hamilton.docx)
		2. CID 1394 (MAC)
			1. Review Comment
			2. Proposed Resolution: Rejected. Adding such a restriction could make existing implementations non-compliant. Further, the comment provides no clear problem that would be solved by such a restriction.
			3. No objection – Mark Ready for Motion
		3. CID 1369 (MAC)
			1. Review comment
			2. Proposed Resolution: Rejected. Subclauses 11.1.4.6 and 11.1.7 describe required behavior for the receiver and transmitter of these elements, respectively. There is minimal duplicated information between these two subclauses, and only where it helps understand the overall behavior expectations of the receiver or transmitter, appropriately.
			3. No objection – Mark Ready for Motion
		4. CID 1397 (MAC)
			1. Review Comment
			2. Proposed Resolution: Rejected. The request in 9.4.2.20.19 is for a Fine Timing Measurement Report, not for a Fine Timing Measurement procedure directly. Such a request for a report can use the randomization interval before starting, as specified in 11.10.3. Thus, the cross-reference is correct. See also 11-18/0669 for more detailed discussion.
			3. No Objection – Mark Ready for Motion
		5. CID 1354 (MAC)
			1. Review Comment
			2. Proposed Resolution: REVISED. Add a sentence to the end of the first paragraph in 9.2.2, “A field or subfield within the figure depiction of a frame format that includes a decimal value within parentheses indicates that this field or subfield is set to the indicated value upon transmission.”
			3. No Objection – Mark Ready for Motion
	2. I had to leave – Michael MONTEMURRO take notes from here----
		1. ================================================
		2. CID 1382 (MAC)
			1. Review comment
			2. ACTION ITEM #1 Mark HAMILTON needs to provide an updated resolution based on Mark R’s comments.
		3. CID 1189 (MAC)
			1. Review Comment
			2. Proposed Resolution: REVISED (MAC: 2018-05-09 12:12:00Z): Incorporate the text changes in 11-18/871r0 < 11-18-0871-00-000m-resolution-for-cid1189.docx >. This accomplishes the commenter's request.

(The change includes strikethroughs, so we can't do it directly, but need to reference the document.)

* + - 1. No Objection – Mark Ready for Motion
		1. CID 1354: (MAC)
			1. The proposed use of reserved is incorrect in the sited location.
			2. There is nothing to describe what the numbers in parentheses mean in Figure 9-22
			3. There are examples where a number has been supplied as default field value
			4. We could use this convention for a number of fixed fields – just not as this comment resolution.
			5. Proposed Resolution: REVISED. Add a sentence to the end of the first paragraph in 9.2.2, “A field or subfield within the figure depiction of a frame format that includes a decimal value within parentheses indicates that this field or subfield is set to the indicated value upon transmission.”
			6. Mark Ready for Motion
		2. CID 1382 (MAC)
			1. Mark Rison provided a comment on the proposed resolution.
		3. There is no updated resolution available at this time.
		4. Bring back later
	1. **Presentation of document 11-17/871r0** James LEPP (BlackBerry)
		1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0871-00-000m-resolution-for-cid1189.docx>
		2. CID 1189 (MAC)
			1. Proposed changes for MD (this is based on CWmin being 15 and CWmax being 1023 which is set elsewhere in the document for the OFDM PHY).

**Table 9-138—Default EDCA parameter set for STA operation if dot11OCBActivated is true**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **AC** | **CWmin** | **CWmax** | **AIFSN** | **TXOP limit** |
| AC\_BK | aCWmin | aCWmax | 9 | 0 |
| AC\_BE | aCWmin | aCWmax | 6 | 0 |
| AC\_VI | ~~(aCWmin+1)/2-1~~aCWmin | ~~aCWmin~~aCWmax | ~~3~~4 | 0 |
| AC\_VO | (aCWmin+1)/4 -1 | (aCWmin+1)/2 -1 | 2 | 0 |

* + 1. Proposed Resolution: REVISED (MAC: 2018-05-09 12:12:00Z): Incorporate the text changes in 11-18-0871-00-000m-resolution-for-cid1189.docx.
		2. No objection – Mark Ready for Motion
	1. **Presentation of document 11-18/872r0** James LEPP
		1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0872-00-000m-resolution-for-cid1190.docx>
		2. CID 1190 (MAC)
			1. There are implementations that use OCB and transmit null data frames.
			2. The document will be revised based on the discussion.
	2. **Presentation of document 11-18-674r2**, Abhishek PATIL
		1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0674-02-000m-lb232-cids-assigned-to-abhishek.pptx>
		2. No discussion.
	3. **Presentation of document 11-8-0675r2**, Abhishek PATIL
		1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0675-02-000m-lb232-cids-1293-1294-1298.docx>
		2. CID 1293, 1294 (MAC)
			1. Proposing resolutions for CIDs 1293, and 1294:
			2. The STA behavior is not defined sufficiently on the requirements for processing a partial profile.
			3. This proposal indicates that the profile is a partial profile.
			4. This is a new feature. Why isn’t this being added to TGax?
			5. This signalling will provide little value to legacy devices.
			6. The goal of the original to the design was to give flexibility to the AP. Not much thought was given to how a STA might process the information.
			7. **STRAW\_POLL:** For CIDs 1293 and 1294, do you

a) support the changes

b) oppose the changes

c) abstain

* + - * 1. STRAW Poll Result: a) 4; b) 3; c) 7
			1. Prepare a motion to proceed with the above CIDs.
		1. CID 1298 (MAC)
			1. The comment deals with a non-transmitted BSSID inheriting properties from the transmitted BSSID.
			2. There needs to be a way to inherit whether a particular element is inherited or not inherited.
			3. Is there really an issue with the current specification? We need to understand why MBSSID was provided by this.
			4. Setting the length to 0 for a given element may adversely affect a legacy device.
			5. If this change is for 11ax devices, perhaps this submission should be considered for 11ax.
			6. For the inherited elements, the information fields are absent.
			7. You could define a new element where you specified a list of element ids for inherited elements.
			8. STRAW POLL: For CID 1298 do you

a) support the changes

b) oppose the changes

c) abstain

* + - * 1. STRAW POLL Result: a) 3; b) 4; c) 7
			1. It looks as though additional discussion is required.
		1. ====================================== - End Minutes by Michael
	1. Review document Robert STACEY – 11-18-702
		1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0702-00-000m-lb232-cr-on-elements.docx>
		2. CID 1100
			1. Review comment
			2. Review submission
			3. Correction in Table 9-87 for the lower right, should be “N/A”. This will be in the R1 of the document.
			4. A Similar CID 1101 was discussed before and proposed rejected, but this needs to be reviewed.
			5. Reviewed Minutes from REVmd Adhoc:

4.4.9 CID 1101 (Editor)

4.4.9.1 Review Comment

4.4.9.2 Discussion on the value of separating the table, and if we do split the table the possible concern for two tables causing a ripple effect of confusion.

4.4.9.3 Alternatively, we could have the main table have an 255 entry that references an extension table.

4.4.9.4 One-point concern is that we have changed the table each revision, and we should leave well enough alone.

4.4.9.5 Propose to Reject; Having all information in one table provides a single reference. The current table is clear. No need to change.

4.4.9.6 The later part of the comment is about having “field” added to the title label. Discussion on the value of that proposed change.

4.4.9.7 The paragraph at 904.6 describes the element format and shows the specific fields in context in Figure 9-136. We do not need to add “field” in all the table labels.

4.4.9.8 Proposed Resolution: Reject; Having all information in one table provides a single reference. The current table is clear. Also, Figure 9-136 shows the Element format. No need to add “field” in the column

4.4.9.9 No Objection – Mark Ready for Motion

* + - 1. The issues is that the Editor guide says that “Field” is required., so when a field is referenced in a table, it should have the “Field” name.
				1. So for a a Table where the name is in the table I.e.9-7 we see name “subfield”
				2. We did not find examples of proper use very easy.
			2. The technical issue is that the word “Optional” is just wrong.
			3. The change to 9.4.2.1 is to make a simple sentence with reference to Figure 9-136.
			4. There was discussion on if the change to the table is needed, or just the introduction text.
			5. ACTION ITEM #3: Robert to remove the table changes and make the change to the “Optional” issue.
			6. Assign CID 1102 To Robert STACEY (was assigned on 4-24-2018).
			7. Discussion on the removing the length of fields that are described in the figure, so only one place are things defined.
			8. Discussion on the Element ID field is 255 meaning an extension.
			9. “Optional” fields in 11ax was described as an example of wording. (secretary did not capture actual words).
				1. The Technical Editor said that example was an error.
			10. Discussion “An Element is identified by the Element ID field and, if present, the Element ID Extension field. The Element ID Extension field is present if the Element ID field is 255.
			11. If we agree to keep in one table, then the sentence could just refer to the column not having a “N/A” value.
			12. More discussion on the format of the table and the sentence until we ran out of time.
	1. **Recess** 3:31pm
1. **802.11md -- REVmd – 802W Interim – Warsaw,** Wednesday PM2 16:00-18:00 – May 9, 2018
	1. **Call to order**, 16:02 by the Chair, Dorothy STANLEY. - Chair’s welcome.
	2. **Review Patent Policy**.
		1. No response.
	3. **Review Agenda**

Wednesday PM2

1. Motions
2. 11-18-0691: ISO/IEC JTC1 SC6 Comments
3. 18/865: CID 1066 (Beacon Protection) Emily QI (Intel)
4. 18/889: Carlos CORDEIRO – DMG CIDs
5. 11-18-810, CID 1195 - Guido HIERTZ
	* 1. No objection to the Agenda
	1. **Motions**
		1. **Motion #W3**: Approve Prior TGmd Minutes:
			1. **Approve the minutes of**

TGmd March 2018 meeting, Rosemont: <https://mentor.ieee.org/802.11/dcn/18/11-18-0296-01-000m-minutes-revmd-march-2018-rosemont.docx>

April teleconferences: <https://mentor.ieee.org/802.11/dcn/18/11-18-0612-01-000m-minutes-for-revmd-april-2018-telecons.docx>

* + - 1. **Moved: Jon Rosdahl Seconded: Michael MONTEMURRO**
			2. **Result #W3: Approved by Unanimous consent**
		1. **Motion #49** Editor CIDs – AdHoc/telecon:
			1. **Approve the comment resolutions in the**

“Motion-EDITOR-A” and “Motion-EDITOR-B” tabs in 11-18/657r2 <<https://mentor.ieee.org/802.11/dcn/18/11-18-0657-02-000m-revmd-wg-lb232-comments-for-editor-ad-hoc.xls> >

“Motion-EDITOR2-A” and “Motion-EDITOR2-B” tabs in 11-18/619r5 <<https://mentor.ieee.org/802.11/dcn/18/11-18-0619-05-000m-revmd-editor2-lb232-comments.xlsx> >

and incorporate the indicated changes into the TGmd draft.

* + - 1. Moved: Emily QI Seconded: Graham SMITH
			2. Move to divide the question – it was determined to take out the“Motion-EDITOR2-B” tab.
			3. **Updated Motion #49:**
				1. Approve the comment resolutions in the

“Motion-EDITOR-A” and “Motion-EDITOR-B” tabs in 11-18/657r2 <<https://mentor.ieee.org/802.11/dcn/18/11-18-0657-02-000m-revmd-wg-lb232-comments-for-editor-ad-hoc.xls> >

“Motion-EDITOR2-A” tab in 11-18/619r7 <<https://mentor.ieee.org/802.11/dcn/18/11-18-0619-07-000m-revmd-editor2-lb232-comments.xlsx> >

and incorporate the indicated changes into the TGmd draft.

* + - 1. **Result #49:**  **18-0-1 – Motion Passes**
			2. **Motion #50** to consider Motion-EDITOR2-B tab
				1. Approve the comment resolutions in the

“Motion-EDITOR2-B” tabs in 11-18/619r7 <<https://mentor.ieee.org/802.11/dcn/18/11-18-0619-07-000m-revmd-editor2-lb232-comments.xlsx> >

and incorporate the indicated changes into the TGmd draft.

* + - * 1. Moved: Emily QI 2nd: Adrian Stephens
				2. Discussion on the Parts per Million (PPM) change was rejected and the guidelines suggest this should be avoided.
				3. **Results #50**: 11-1-6 – Motion Passes
		1. **Motion #51**– Editor CIDS - WARSAW
			1. Approve the comment resolutions in the

“Motion-EDITOR-C” and “Motion-EDITOR-D”

Motion Editor2-C tab in 11-18/619r7

* + - 1. Moved Emily QI 2nd: Michael MONTEMURRO
			2. Discussion: Note CID 1588 has a tag issue in the resolution field that can be fixed editorially, and it will also have another CID that will be brought up later that may cause this resolution to be changed.
			3. **Results #51:** 16-0-3 – Motion Passes.
		1. **Motion #52– MAC/PHY Telecon & ad-hoc CIDs**
			1. Approve the comment resolutions in the

“PHY Motion A” tab in <https://mentor.ieee.org/802.11/dcn/18/11-18-0670-02-000m-lb232-revmd-phy-sec-comments.xls>

“Motion MAC-N” tab in <https://mentor.ieee.org/802.11/dcn/17/11-17-0927-16-000m-revmd-mac-comments.xls> changing the resolution in CID 1504 to reference 11-18/480r3 and excluding CID 1382.

“GEN April Telecon and Adhoc” tab in <https://mentor.ieee.org/802.11/dcn/18/11-18-0614-00-000m-revmd-lb232-gen-comments.xls>

and incorporate the indicated changes into the TGmd draft.

* + - 1. Moved: Jon Rosdahl 2nd: Michael MONTEMURRO
			2. Discussion: note that there were comments on the reflector about a PHY comment on a previous version of the document that are not on the tab in this motion.
			3. **Result #52: 12-0-4 Motion Passes.**
		1. **Motion #53** – Incorporate 11-18/747r1 – PCF Deletion Clean-up
			1. Move to incorporate the changes in 11-18-747r1 <<https://mentor.ieee.org/802.11/dcn/18/11-18-0747-01-000m-pcf-deletion-cleanup.docx> **>into the TGmd draft.**
				1. Moved: Menzo WENTINK 2nd: Adrian Stephens
				2. Discussion: None
				3. **Results #53**: approved by unanimous consent.
		2. **Motion**– 11-17/1807r10 - MITM Attack mitigation
			1. **Move to incorporate the changes in 11-18/1807r10 <**<https://mentor.ieee.org/802.11/dcn/17/11-17-1807-10-000m-defense-against-multi-channel-mitm-attacks-via-operating-channel-validation.docx> **>into the TGmd draft.**
				1. Review changes to 11-18/1807r8 since presented yesterday.
				2. Concern on the ANA flagged values not being a variable rather than a guess value. Should be variable awaiting assignment.

Note that there is only one value left to give from the ANA for this, so the bit should be reasonably accurate

* + - * 1. Delay to switch channel needs to be better described.

Does this include CCA? Some discussion that yes it is clear, and some said not, so maybe the text is not clear enough.

* + - * 1. So, we did not make the motion, and Nehru will bring back later. (no 2nd was made).
	1. **Review doc 11-18/0691r1** – Resolution of China NB FDIS Comments
		1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0691-01-000m-resolution-of-china-nb-fdis-comments.docx>
		2. Review comments from the China National Body
		3. Review proposed resolutions for the comments.
		4. **Proposed resolution to CN1, CN5, CN6, CN11**

Reject.

It is acknowledged and agreed that both WEP and TKIP are vulnerable to attack and that using either one of them, or the TSN mechanism, would result in a compromise of network security. However, WEP and TKIP, and therefore the TSN mechanism, are all deprecated by the standard, meaning they have been superseded (by CCMP and GCMP) and are no longer considered safe to implement. As stated in section 5.1.2 of IEEE 802.11-2016, both WEP and TKIP are “unsuitable for the purposes of this standard.” IEEE 802.11 includes deprecated protocols for historical reasons.

Michael, the MIC capability of TKIP, was designed to offer security against attacks on O(220). Shutting down the BSS was deemed to be a suitable countermeasure at that time given the perceived strength of Michael. A thorough discussion on the strength of Michael, and better countermeasure, is described in:

<https://mentor.ieee.org/802.11/dcn/03/11-03-0211-00-000i-michael-attacks-and-countermeasures.ppt>

Regardless, MIC capability of TKIP is also deprecated and marked as unsuitable.

* + 1. We have a process to review all comments that come from the ISO Ballot.
		2. The Ballot 1as 12/13 voting in favor. So, while there is only one no voter the comments need to be considered and responded to.
		3. **Comments dealing with KRACK**:
			1. CN1

See above

* + - 1. CN12

Comment:

The well-known KRACK attack which causes session key reinstallation has not be resolved in this proposal [emphasis in original]. Investigators have proved the weakness of IEEE 802.11, that 4-way handshake, group key handshake, STAKey handshake, FT handshake and so on, are vulnerable to a key reinstallation attack, which will happen regardless of whether there is an active attacker or not. Finally, it resulted in data to be replayed, decrypted and forged. Please refer to <https://papers.mathyvanhoef.com/ccs2017.pdf> . It is indicated by thorough research and analysis that the nonce and replay counter are easily reset to their initial value which will result in reinstallation of session key. Indeed, the experiments of the attack on different system demonstrated that the key could be reinstalled and the IV was initialized maliciously.

* + - 1. Proposed Change:

To meet the nonce uniqueness requirements, the nonce values need to be carefully detected and set to instruct implementers to prevent nonce resetting during key installation events.

* + 1. **Proposed resolutions to CN1 & CN12**

Revised.

The KRACK attack is against implementations of ISO/IEC/IEEE FDIS 8802-11, not against the standard itself.

Indeed, nonce uniqueness is already clearly described in IEEE 802.11-2016. For instance, section 12.5.3.1 states: “CCM requires a fresh temporal key for every session. CCM also requires a unique nonce value for each frame protected by a given temporal key, and CCMP uses a 48-bit packet number (PN) for this purpose. Reuse of a PN with the same temporal key voids all security guarantees [emphasis added].” There is similar text in the standard for GCMP.

Nonetheless, an additional reminder was added to Draft P802.11REVmd in the MLME primitive that performs key installation. This change will be seen in a forthcoming PSDO submission when the current maintenance cycle is completed in the IEEE 802.11 WG.

* + 1. ***Comments dealing with PMK and its transport***
			1. **Proposed resolution to CN4, CN8 and CN3**

Reject.

There is no requirement in ISO/IEC/IEEE FDIS 8802-11 to transmit a PMK from an authentication server to the Authenticator. An external AS is an optional enhancement for authentication credentials that are more suited to central management, for instance using username/password credentials.

Techniques in the standard to derive a PMK on both the STA and AP/Authenticator include:

1. The SAE protocol (section 12.4) which describes a way to derive a PMK between STA and AP using a zero-knowledge proof authenticated with a simple password.
2. The Fast-Initial Link Setup (FILS) protocol, which amends ISO/IEC/IEEE 8802-2016 and has been approved by ISO/IEC/JTC1/SC6 using the PSDO process, includes the ability to establish a PMK as the result of a Diffie-Hellman key exchange between STA and AP authenticated using either X.509 certificates or raw public keys.
3. Terminating the EAP exchange directly on the AP/Authenticator and deriving a PMK there. To use the example from comment CN3, EAP-TLS using certificates could easily be terminated on the Authenticator without requiring an external Authentication Server.

Since ISO/IEC/IEEE FDIS 8802-11 is restricted to the PHY and MAC layers of the OSI model, description of communication between the Authenticator and a centrally-managed authentication server is out of the scope of the standard.

While such a protocol is out of scope, section 4.10.6 of ISO/IEC/IEEE FDIS 8802-11 clearly describes the requirements placed on the Authenticator-to-AS protocol if a deployment requires one.

* The first two are “*[m]utual authentication between the Authenticator and the AS*” and “*[a] channel for the Supplicant/AS authentication.*” Suitable protocols to satisfy these requirements are listed in 4.10.6 as RFC 2865 (RADIUS) and RFC 3588 (Diameter) with further discussion in section 12.7.1.3.
* The final requirement is “*[t]he ability to pass the generated key from the AS to the Authenticator in a manner that provides authentication of the key source, preserves integrity of the key transfer, and preserves data confidentiality of the key from all other parties.*” A suitable technique to ensure the confidentiality and integrity of the key as well as an authenticated key transfer is using either one of the aforementioned protocols with RFC 6218 attributes and ISO 20038-2017 Key Wrapping using AES.
	+ 1. ***Comment dealing with cipher suite negotiation***
		2. **Proposed resolution to CN13**

Reject.

All standards need to have mandatory-to-implement options to ensure interoperability, which is a primary purpose of international standardisation. ISO/IEC/IEEE FDIS 8802-11 has chosen a well-vetted and internationally designed and recognized cipher (AES) for that purpose.

There is no requirement for ISO/IEC/IEEE FDIS 8802-11 to comply with the laws of every country around the world. Indeed, any attempt to do so is likely to fail because of the diversity of laws and because they can change over time. However, ISO/IEC/IEEE FDIS 8802-11 provides the ability to negotiate different ciphers through cipher suites in the RSNE that may allow local laws and regulations to be better satisfied in some countries.

There are two options for using other ciphers with ISO/IEC/IEEE FDIS 8802-11:

1. Produce a published and readily-available definition of the cipher, a proof of security by reputable cryptographers, a set of test vectors, and a public submission of how to modify 802.11 so the cipher can protect 802.11 frames (including the 802.11 header) that meets the requirements of 802.11 ciphers—namely, confidentiality, data source authentication, data integrity, and anti-replay protection. Bring these documents and any additional supporting documentation to a future IEEE 802.11 Working Group meeting and advocate for the inclusion of the cipher in table 9-131 and allocation of a Suite number by ANA; or,
2. Purchase a CID from the IEEE RAC, use it to create a registry of non-public ciphers, and use the Vendor Specific cipher suite from table 9-131 with a Suite number from that registry.

Choosing option 1 or 2 depends on whether or not, respectively, the China NB wishes for there to be substantial implementation and use of their national cipher outside of the jurisdiction of the local laws and regulations it states are necessary to abide by.

* + 1. ***Comment dealing with EAP method negotiation***
			1. Proposed resolution to CN7

Reject.

ISO/IEC/IEEE FDIS 8802-11 places security requirements on implementations, it does not require that any particular EAP method be supported, especially not EAP methods that are susceptible to attack.

The standard clearly states that if IEEE 802.1X-2010 is used, the EAP method shall support mutual authentication. Any EAP method that was susceptible to “breaking up” in the form of a MITM attack would not satisfy that requirement. There is no requirement to implement all EAP methods, much less EAP methods susceptible to attack.

In fact, the freedom afforded deployments by this minimal requirement has resulted in plain unitary EAP methods, tunnelled EAP methods, and chained EAP methods that address unique and complex requirements seen in the real world dealing with machine authentication in addition to user authentication using every credential possible—certificates, smart cards, SIM cards, token cards, username/password, etc. The wide deployment of 802.11 with 802.1X/EAP authentication indicates a great success in this approach, not the problem alleged in the comment.

* + 1. ***Comment on redesigning the 4-way Handshake***
			1. Review CN9
			2. **Proposed resolution to CN9**

Reject.

The Supplicant state machine accepts an unencrypted, and retransmitted, message 3 in the event of a loss of message 4. The state machines for the 4-way Handshake are very robust and will synchronize in the presence of packet loss. They been proven using formal methods.

In fact, it was this case— a lost message 4 and retransmitted message 3—where the MLME-SETKEYS primitive gets called a second time which resulted in certain faulty implementations resetting the nonce to zero in the KRACK attack. In other words, the KRACK attack against certain implementations was possible because the 4-way Handshake state machine permits an unencrypted and retransmitted message 3 to be processed.

There is no issue to resolve, the mechanism has been proven in theory and in practice to operate effectively and as intended.

* + 1. ***Comment on not using URN but use OUIs instead***
			1. Review CN2
			2. Proposed resolution to CN2

Reject.

Many of the mentioned identifiers are specific to ISO/IEC/IEEE FDIS 8802-11 and managed by the IEEE 802.11 ANA. When extensibility is desired, OUIs are already used. For example, the specification of cipher suites, authentication and key management suites, and key data encapsulations allow for external organizations to use an assigned OUI to manage resources.

* + 1. ***Comment about too many messages in EAP***
			1. Proposed resolution to CN10

Reject.

It is not clear where “over 20 messages” came from. The total number of messages could be 14 if RFC 5931 is used. This EAP method defined in RFC 5931 satisfies the requirements ISO/IEC/IEEE FDIS 8802-11 places on EAP methods and uses 6 messages.

In addition, the Fast Initial Link Setup (FILS) protocol specified in IEEE Std 802.11ai-2016, which amends ISO/IEC/IEEE 8802-2016 and has been submitted to ISO/IEC/JTC1/SC6 using the PSDO process, performs a Diffie-Hellman key exchange, authenticated with digital signatures, and generates traffic encryption keys all in just 4 messages total, including the 802.11 Authentication and 802.11 Association frames.

Any potential issue has already been resolved.

* + 1. Discussion – WEP is obsoleted and TKIP is deprecated. Need to modify the resolution accordingly.
		2. CN9 discussion on the 4-way handshake issue.
		3. All the comments we receive will be process as they come in from any source.
		4. There may be some more discussion/preparation on the resolution for CN9
		5. The discussion on the 4-way handshake and if this issue is a security issue or not?
		6. Dan will work to update the document and bring to the Working Group on Friday during the Closing Plenary for consideration.
	1. **Review document 11-18/0865r1** – Emily QI (Intel)
		1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0865-01-000m-beacon-protection.ppt>
		2. CID 1066 (EDITOR)-
			1. Review Presentation - This submission provides a solution to protect Beacon frame from “outsider” forgery.
			2. Discussion on concerns with the proposal.
			3. Discussion on the capability bit needed may not be available, and so the extension would have to be designed.
			4. Concern with the summary statement expressed:
			5. Summary statement:

Proposed solution leverages the existing RSN security and reuses BIP

Simple and easy to deploy

Proposed solution protects Beacon frames for associated STAs from “outsider” forgery

All beacon contents prior to association should be treated as unreliable and validated following association based on the protected Beacon.

* + - 1. Discussion on the Muli-BSS case and the concern with what associated state information may be available.
			2. Discussion on what occurs when a beacon comes without a valid MIC especially in the Multi-BSS case.
			3. It may be that a Study Group could be created for creating a group to define a full project, but other groups are looking to combine features in implementations in a more timely manner.
	1. **Review Doc 11-18/889r0** – Carlos Cordeiro (Intel)
		1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0889-00-000m-resolution-to-some-dmg-related-cids.docx>
		2. CID 1021 (MAC)
			1. Review Comment
			2. Review proposed change
			3. Proposed Resolution: REVISED (MAC: 2018-05-09 15:47:59Z): Incorporate the changes shown in 11-18/0889r0 for CID 1021. These changes accomplish the commenter's request.
			4. No Objection – Mark Ready for Motion
		3. CID 1030 (MAC)
			1. Review comment
			2. Review proposed changes
			3. The phrase “session transfer” is not really defined, or use a different term.
				1. There is a definition of FST.
			4. Concern that “This Field” and “This Element” may not be specific enough.
			5. Concern on the reorientation of the paragraph.
	2. Ran out of time.
	3. Recess at 6:01pm
1. **802.11md -- REVmd – 802W Interim – Warsaw,** Thursday PM1 – 10 May 2018 – 13:30-15:30
	1. **Called to order** by the chair, Dorothy STANLEY (HPE), at 1:32pm
	2. **Review Patent Policy**
		1. No issues noted.
	3. **Review Agenda for today**:

Thursday PM1

1. Mark HAMILTON – CIDs 1586, 1556, 1384, 1315, 1192, 1286
2. Yujin NOH – 11-18-710r2
3. Roger MARKS – CID 1533
4. Ganesh VENKATESAN – 11-18-885
5. Plans for May 2018 – July 2018,
6. Adjourn
	* 1. No Objection to proceed with Agenda
	1. **Review Document 11-18/710r2** – Yujin Noh (Newracom)
		1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0710-02-000m-resolutions-to-txvector-and-rxvector-of-11ah-phy.docx>
		2. CID 1136, 1131, 1132 (PHY)
		3. CID 1133, 1134, 1135, 1137, 1138, 1139 (PHY)
			1. Review comment
			2. Review Submission
			3. Discussion on leaving “Condition” of the table blank.
			4. Noted that when the condition is not true, that otherwise would be needed. But some parameters are always true, so not condition needed, and so no otherwise either.
			5. Continue reviewing proposed changes.
			6. Discussion on removal of Expansion\_MAT\_TYPE – it is always the same, so not needed.
			7. More work to be done and bring back.
			8. As we reviewed the table, we note that when there is no “Otherwise” then the “Condition” would be blank.
			9. Discussion on MCS – “Otherwise” was created from the other options that were being deleted.
			10. We ran out of Time for presentation.
			11. The Length parameter was reviewed for CID 1138
				1. (Top of Page 18) Aggregation is Aggregation. The definition has extraneous info
				2. PSDU\_LENGTH Parameter is in the definition and thus a bit strange to define in this manner.

|  |  |  |  |
| --- | --- | --- | --- |
| AGGREGATION is NOT\_AGGREGATED | It indicates the packet duration in number of octets defined in PSDU\_LENGTH parameter. (#1138)  | Y | Y |

* + - * 1. It is odd to define a parameter to conditionally have the same value as another parameter.
			1. It is worse than odd because, on transmit, this is a hidden "shall" statement for the MAC.
		1. Author will update the document in response to questions on the submission.
	1. **Review CIDS 1586, 1556, 1384, 1315, 1192, 1286**
		1. This full list is assigned to others and is not ready to discuss.
		2. CID 1586, 1382 can be done now.
		3. CID 1286 – can be discussed after the other two
		4. CID 1586 (MAC)
			1. Review Comment
			2. Discussion on if WNM-Notify is really supposed to be WNM Notification.
			3. Question on why the table 9-396 is not ANA control.
			4. If we remove, the value could be marked reserved, or does it need to be blocked from future use. If it is not ANA controlled, marking reserved would be a reasonable answer.
			5. Proposed resolution: REVISED (MAC: 2018-05-10 12:30:46Z): Delete this row. Change the "Reserved" row to cover values 28-255.
			6. Mark Ready for Motion
		5. CID 1382 (MAC)
			1. Review Comment
			2. Notes from the MAC AdHoc for this CID:
				1. After email discussion, proposed UPDATE to resolution
				2. REVISED.
				3. At 2170.37, delete the sentence, “A STA that implements BSS transition management has dot11BSSTransitionImplemented equal to true.”
				4. At 2170.39 ½, change “dot11BSSTransitionImplemented” to “dot11BSSTransitionActivated”.
				5. The suggestion to also "delete dot11BSSTransitionImplemented from C.3" is not agreed. First, we don't delete MIB attributes, we deprecate them (for backward compatibility reasons). Also, the rationale to delete it is that it is not used in text (anymore, with the above changes). But, we have a lot of attributes that are not used in text, and ARC SC is looking at that as part of the MIB attribute usage guidelines/cleanup. Update this one, along with all the others, once a plan is agreed in ARC.
			3. So, after reviewing this possible discussion, it was determined that maybe it was too early in the morning to write this out.
			4. Proposed Resolution: REJECTED (MAC: 2018-04-11 02:29:42Z): For dot11BSSTransitionActivated to be true, logically, dot11BSSTransitionImplemented must also be true without needing to state so.
			5. The ARC definition of “Activated” vs “Implemented” is True statement.
			6. Discussion on if there is a need to change or not. Is the context of the paragraph sufficient? It was determined it was and so the proposed resolution to reject will be used.
			7. Mark Ready for Motion
		6. CID 1286 (MAC)
			1. We have started a discussion but we have ran out of time, so will take up later, and this CID is related to 1588 and need to be harmonized with that CID.
	2. **Review 11-18/949r0** – Roger Marks (EthAirNet)
		1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0949-00-000m-proposed-resolution-of-cid-1533-on-rnr.docx>
		2. CID 1533 (MAC)
			1. Summary from document:

The proposal raises valid concerns; However, the proposed change is too severe and would delete a major set of changes introduced in 802.11ai. The proposed resolution provides a more detailed solution to address incompatibilities and ambiguities while maintaining compatibility with 802.11ai.

The 802.11ai content has interfered with backward compatibility with TVHT operation, because the RNR was originally specified in 802.11af. Therefore, the proposal restricts the 802.11ai change to protect the legacy TVHT.

The proposed resolution corrects several diverse defects. For example, a paragraph on TBTT Information Count seems to have been accidentally deleted in the generation of Draft D1.0. Also, it proposes to move subclause 11.42.8 (“Reduced neighbor report”) to not be a subset of 11.42 (“Operation under the control of a GDB”) because the RNR is not intended to be limited to geolocation database operation, though it originated in 802.11af.

* + - 1. Review the proposed changes.
			2. Discussion on the potential changes. It had some minor concerns on the Matching of the SSID of the frame is not clear.
			3. Author to review and updated version on a later telecon.
	1. **Review doc 11-18/885r1** Genesh VENKATESAN
		1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0885-01-000m-resolutions-to-cids-1015-1384-and-1506.docx>
		2. CID 1145 (MAC)
			1. Review comment
			2. Discussion from submission:

11.22.6.3 8th paragraph describes what happens when the FTM negotiation is successful and should only describes what is included in the initial FTM frame (the response to the initial FTM Request from the initiator) contains. It should not be describing what was included in the initial FTM Request.

* + - 1. There is a typo in Table 9-272 – D1G should be S1G.
			2. Discussion on the value of making a change for possible future uses.
			3. TGah and Fine Timing definition was developed in parallel, so we need to identify the value of making the change. It is not just a frame format, it is an actual feature that is being asked for.
			4. ACTION ITEM #4: Dorothy to contact Yongho SEOK and ask to present in a future meeting.
		1. CID 1015 (MAC)
			1. Review Comment
			2. See 2161.50 for context for duplicate lines at 2161.62.
			3. Discussion on if we should delete paragraph 7 or paragraph 8 or some subset of each.
			4. Proposed Resolution: REVISED (MAC: 2018-05-10 13:17:31Z): Incorporate the changes shown in 11-18/0885r2 for CID 1015. This is similar to the proposed change, except keeps the first sentence of the 7th paragraph in the original location.:
			5. No objection – Mark Ready for Motion
		2. CID 1384 (MAC)
			1. Review comment
			2. Proposed Resolution: CID 1384 (MAC): REJECTED (MAC: 2018-05-10 13:19:31Z): 11.22.16.3.7 discusses GCR Block Ack and has a reference to 10.25.8. (P2185L50).
			3. No Objection – Mark Ready for Motion
	1. **May 2018 – July 2018 Meeting Planning**
		1. Objectives: Comment resolution
			1. Conference calls
			2. Fridays May 25, June 1, June 15, 22
		2. **Next ad-hoc: August**
			1. Have volunteer for Portland
			2. Dates: Target July 31, August 1 & 2.
			3. **Motion #W4:** Approve next AdHoc
				1. **Motion** to approve Adhoc in Portland OR July 31 to Aug 2 2018.
				2. Moved: Emily QI, 2nd: Michael MONTEMURRO
				3. **Results #W4:** 9,0,0 Motion approved.
			4. **Schedule review**
			5. Announcement of Availability of 11md D1.0 in the IEEE store
				1. Upon successful WGLB – Draft 1.0 is available for purchase, see <http://www.techstreet.com/ieee/products/vendor_id/7028>
	2. **Adjourned 3:30pm**

**References:**

**CID Status at end of Thursday:**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Owning Ad-hoc** | **Unassigned** | **Submission Required** | **Assigned** | **Discuss** | **Review** | **Resolution Drafted** | **Ready for Motion** | **Approved** | **Grand Total** |
| EDITOR |   |   | 6 | 1 |   |   |   | 143 | 150 |
| GEN | 47 | 1 | 23 | 3 | 2 |   |   |   | 76 |
| MAC | 19 |   | 143 |   |   |   | 13 |   | 175 |
| EDITOR2 | 4 |   | 1 | 1 |   | 2 |   | 106 | 114 |
| PHY |   |   | 101 |   |   | 7 |   |   | 108 |
| **Grand Total** | **70** | **1** | **274** | **5** | **2** | **9** | **13** | **249** | **623** |

**Monday PM1:**

1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0625-01-000m-2018-may-tgmd-agenda.pptx>
2. <https://mentor.ieee.org/802.11/dcn/13/11-13-0652-02-000m-some-more-lb193-resolutions.doc>
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/18/11-18-0658-05-000m-lb232-proposed-resolutions-for-editor-ad-hoc.doc>
5. <https://mentor.ieee.org/802.11/dcn/18/11-18-0897-00-000m-comment-resolution-on-cids-1038-1589-1113-and-1111.docx>
6. <https://mentor.ieee.org/802.11/dcn/18/11-18-0701-00-000m-cids-1388-and-1359.docx>

**Tuesday PM1**:

1. <https://mentor.ieee.org/802.11/dcn/13/11-13-0652-03-000m-some-more-lb193-resolutions.doc>
2. <https://mentor.ieee.org/802.11/dcn/18/11-18-0747-00-000m-pcf-deletion-cleanup.docx>
3. <https://mentor.ieee.org/802.11/dcn/18/11-18-0652-01-000m-resolution-for-wep-tkip-removal-cids.docx>
4. <https://mentor.ieee.org/802.11/dcn/18/11-18-0480-03-000m-peerkey-deletion-cleanup.docx>
5. <https://mentor.ieee.org/802.11/dcn/17/11-17-1807-08-000m-defense-against-multi-channel-mitm-attacks-via-operating-channel-validation.docx>
6. <https://mentor.ieee.org/802.11/dcn/18/11-18-0879-00-000m-d1-0-vht-related-cids.docx>
7. <https://mentor.ieee.org/802.11/dcn/18/11-18-0879-01-000m-d1-0-vht-related-cids.docx>
8. <https://mentor.ieee.org/802.11/dcn/18/11-18-0709-02-000m-resolutions-to-phy-transmit-procedure-of-11ah-phy.docx>

**Wednesday PM1:**

1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0625-04-000m-2018-may-tgmd-agenda.pptx>
2. <https://mentor.ieee.org/802.11/dcn/18/11-18-0669-01-000m-revmd-mac-comments-assigned-to-hamilton.docx>
3. <https://mentor.ieee.org/802.11/dcn/18/11-18-0871-00-000m-resolution-for-cid1189.docx>
4. <https://mentor.ieee.org/802.11/dcn/18/11-18-0872-00-000m-resolution-for-cid1190.docx>
5. <https://mentor.ieee.org/802.11/dcn/18/11-18-0674-02-000m-lb232-cids-assigned-to-abhishek.pptx>
6. <https://mentor.ieee.org/802.11/dcn/18/11-18-0675-02-000m-lb232-cids-1293-1294-1298.docx>

**Wednesday PM2:**

1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0296-01-000m-minutes-revmd-march-2018-rosemont.docx>
2. <https://mentor.ieee.org/802.11/dcn/18/11-18-0612-01-000m-minutes-for-revmd-april-2018-telecons.docx>
3. <https://mentor.ieee.org/802.11/dcn/18/11-18-0657-02-000m-revmd-wg-lb232-comments-for-editor-ad-hoc.xls>
4. <https://mentor.ieee.org/802.11/dcn/18/11-18-0619-05-000m-revmd-editor2-lb232-comments.xlsx>
5. <https://mentor.ieee.org/802.11/dcn/18/11-18-0619-07-000m-revmd-editor2-lb232-comments.xlsx>
6. <https://mentor.ieee.org/802.11/dcn/18/11-18-0670-02-000m-lb232-revmd-phy-sec-comments.xls>
7. <https://mentor.ieee.org/802.11/dcn/17/11-17-0927-16-000m-revmd-mac-comments.xls>
8. <https://mentor.ieee.org/802.11/dcn/18/11-18-0614-00-000m-revmd-lb232-gen-comments.xls>
9. <https://mentor.ieee.org/802.11/dcn/18/11-18-0747-01-000m-pcf-deletion-cleanup.docx>
10. <https://mentor.ieee.org/802.11/dcn/17/11-17-1807-10-000m-defense-against-multi-channel-mitm-attacks-via-operating-channel-validation.docx>
11. <https://mentor.ieee.org/802.11/dcn/18/11-18-0691-01-000m-resolution-of-china-nb-fdis-comments.docx>
12. <https://mentor.ieee.org/802.11/dcn/03/11-03-0211-00-000i-michael-attacks-and-countermeasures.ppt>
13. <https://papers.mathyvanhoef.com/ccs2017.pdf>
14. <https://mentor.ieee.org/802.11/dcn/18/11-18-0865-01-000m-beacon-protection.ppt>
15. <https://mentor.ieee.org/802.11/dcn/18/11-18-0889-00-000m-resolution-to-some-dmg-related-cids.docx>

**Thursday PM1:**

1. <https://mentor.ieee.org/802.11/dcn/18/11-18-0710-02-000m-resolutions-to-txvector-and-rxvector-of-11ah-phy.docx>
2. <https://mentor.ieee.org/802.11/dcn/18/11-18-0949-00-000m-proposed-resolution-of-cid-1533-on-rnr.docx>
3. <https://mentor.ieee.org/802.11/dcn/18/11-18-0885-01-000m-resolutions-to-cids-1015-1384-and-1506.docx>