IEEE P802.11
Wireless LANs

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| Minutes for RCM TIG - November 2019 - Waikoloa |
| Date: 2019-11-15 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Mark Hamilton | Ruckus/CommScope | 350 W. Java DrSunnyvale, CA 94089 | +1-303-818-8472 | mark.hamilton@commscope.com |

Abstract

Minutes for the RCM TIG meetings held during the November 2019 802 Plenary Session

1. **RCM TIG – F2F, Tuesday 12 November 2019, 13:30- 15:30**
	1. **Call to Order** at 13:30 by the TIG Chair, Amelia ANDERSDOTTER (ARTICLE19)
	2. **Call for secretary:**
		1. Mark Hamilton volunteered to act as secretary for this meeting.
	3. **Meeting etiquette reminder. Attendance reminder. Participation reminder. Resource URLs:**
		1. Slides 6 – 12 of agenda deck
	4. **Review Agenda** – 11-19/1741r2
		1. <https://mentor.ieee.org/802.11/dcn/19/11-19-1741-02-0rcm-rcm-tig-november-2019-f2f-agenda.odp>
		2. **Agenda items for the week**
			* + Approve telecon minutes
				+ Review timeline
				+ Discussion of draft report
				+ 11-19/1789 and 11-19/1989
				+ Use-case 3.9 – reworked in 11-19/2098
				+ Filling in Sec. 4 table for use-case 3.10 and 3.11
				+ New use-case: 11-19/2058r1
				+ Recommendations – draft report 1442r5 and 1992r1
				+ Motion to adopt report (tbd)
				+ AOB
				+ Adjourn.
		3. No objection to proposed agenda, as proposed.
	5. **Approve minutes:**
		1. Document 11-19/891 “atlanta-may-2019-minutes” posted to Mentor on 16 May 2019.
		2. **Motion 1: Move to approve document 11-19/891r0 as RCM TIG minutes for the May meeting.** (<https://mentor.ieee.org/802.11/dcn/19/11-19-0891-00-0rcm-atlanta-may-2019-minutes.docx>)
			1. Moved by: Mark Hamilton
			2. Seconded by: Steve Palm
			3. Results (Y/N/A): unanimous consent
		3. Document 11-19/1357 “Minutes for RCM TIG - July 2019 - Vienna” posted to Mentor on 22 July 2019.
		4. **Motion 2: Move to approve document 11-19/1357r0 as RCM TIG minutes for the July meeting.** (<https://mentor.ieee.org/802.11/dcn/19/11-19-1357-00-0rcm-minutes-for-rcm-tig-july-2019-vienna.docx>)
		5. Moved by: Mark Hamilton
		6. Seconded by: Mike Montemurro
		7. Results (Y/N/A): unanimous consent
		8. Document 11-19/1766 “Minutes for RCM TIG - Sept 2019 - Hanoi” posted to Mentor on 14 October 2019.
		9. **Motion 3: Move to approve document 11-19/1766r0 as RCM TIG minutes for the September meeting.**  (<https://mentor.ieee.org/802.11/dcn/19/11-19-1766-00-0rcm-minutes-for-rcm-tig-sept-2019-hanoi.docx>)
			1. Moved by: Steve Palm
			2. Seconded by: Dan Harkins
			3. Results (Y/N/A): unanimous consent
		10. Document 11-19/1768 “Minutes for RCM TIG - Oct 2019 teleconferences” posted to Mentor on 7 Nov 2019.
		11. **Motion 4: Move to approve document 11-19/1768r1 as RCM TIG minutes for the teleconferences organized on 15 and 29 Oct 2019.** (<https://mentor.ieee.org/802.11/dcn/19/11-19-1768-01-0rcm-minutes-for-rcm-tig-oct-2019-teleconferences.docx>)
			1. Moved by: Menzo Wentink
			2. Seconded by: Matthew Wilson
			3. Results (Y/N/A): unanimous consent
	6. **Timeline review**
		1. We are on track. Plan to finalize and adopt the final report this week.
	7. **Discussion on draft report**
		1. Latest draft is in 11-19/1442r4: <https://mentor.ieee.org/802.11/dcn/19/11-19-1442-04-0rcm-rcm-tig-draft-report-outline.odt>
		2. Should we ditch use case 3.9, per discussion on teleconferences?
			1. Alternate: Could add text (for example, from 11-19/1989) to note that there are possible legal concerns.
			2. Could also just change this to rogue detection, rather than mentioning rogue “containment” with potential legal concerns. Consider a re-write to be “rogue detection” based on while-list/black-list concepts.
			3. The current text is unclear what device is taking the containment action.
			4. General leaning toward re-writing this, as suggested above.
		3. Use cases 3.10 and 3.11 are new, and need to be added to Table in section 4.
			1. Use case 3.10: Check layer 2 identifier row
			2. Use case 3.11: Check layer 2 identifier row
			3. Noted that the third row would need more clarification as part of the development of such a feature, to be sure it actually addresses the use cases indicated.
			4. Table is now complete, and agreed.
		4. Document: 11-19/1989r0 (Mark HAMILTON):
			1. <https://mentor.ieee.org/802.11/dcn/19/11-19-1989-00-0rcm-alternate-edits-to-rcm-tig-report.docx>
			2. There might be a problem with the last sentence of definition of changing mac address. Is it needed? It depends on whether we want to provide context to the reader or not.
			3. Randomized and changing are still ambiguous? I.e. is it permanent within some context or changing at regular intervals?
			4. A random mac address which changes over time - its fair enough to say it could be periodic. Is there a use-case where this really matters?
			5. Remove "The duration" sentence?
			6. A lot of the things in the changing mac address is about context.
			7. Discussing RAC assigned OUIs wrt randomized MAC - the issue is if the MAC address is stated on the box, but you then end up misreporting your MAC in usage.
			8. Changing a word will not be onerous because the concept of randomization.
			9. There is a good use case. If you look at Android Pie, once you associate to an SSID for that association it creates a random mac and it remains on your phone until you forget the assignment.
			10. Privacy - is it really accomplished with an Android Pie scheme? It's not really a static mac address because the device keeps changing its MAC - client steering is then made complicated.
			11. Removed sentence "the duration...."
			12. Changed "randomized" to "unassigned" to "local-id" to not conflict with .1CQ
			13. Maybe add a note: people often used "randomized" for either of these three solutions.
			14. Agreed to change "Wi-Fi" to "802.11" globally in the document for consistency
			15. **Use case 3.3:**
			16. Vehicles that use WI-FI do not do pairing this way. They pair based on SSID
			17. Proposal to remove the entire use-cases
			18. The phone is probably also paired on Bluetooth. Part of this use-case imagines a world where it's all Wi-Fi - if you need to, put it back to Bluetooth, then it’s not a use case for us.
			19. Use-cases could be saved just because it's easy to resolve. The TIG considered this use-case and so it should be included?
			20. It is agreed that use-case on car pairing is removed.
			21. **Use case 3.11 residential wireless gateway:**
			22. When you try to authenticate to the network, we have technologies to solve these problems.
			23. Residential wireless gateway use-case is strongly recommended against by some other industry organizations. Describe what happens when there are multiple configurations on a device. So this real problem is this: there are solutions for this but they are not deployed.
			24. Should we be listing that there are recommendations
			25. "A device with multiple Wi-Fi networks configured the prioritization of those networks is implementation dependent. there are no guidelines in 802.11 to specify how that selection is made."
		5. Chair will try to integration into the draft, for consideration this evening
	8. **Recess until Tuesday EVE.**
2. **RCM TIG – F2F, Tuesday 12 November 2019, 19:30 - 21:30**
	1. **Call to Order** by the TIG Chair, Amelia ANDERSDOTTER (ARTICLE19)
	2. **Call for secretary:**
		1. Mark Hamilton volunteered to act as secretary for this meeting.
	3. **Meeting etiquette reminder. Attendance reminder. Participation reminder. Resource URLs:**
		1. Slides 6 – 12 of agenda deck
	4. **Review Agenda** – 11-19/1741r3
		1. <https://mentor.ieee.org/802.11/dcn/19/11-19-1741-03-0rcm-rcm-tig-november-2019-f2f-agenda.odp>
		2. Agenda approved, as proposed.
	5. **Draft report 11-19/1442r5 - Residential gateway use case :**
		1. <https://mentor.ieee.org/802.11/dcn/19/11-19-1442-05-0rcm-rcm-tig-draft-report-outline.odt>
		2. This is now use case 3.10 – renumbered after removing 3.3 on car pairing
		3. There is an industry association that recommends to not use MAC addresses in this fashion.
		4. No simple alternate way to solve this is known, immediately.
		5. Thus, agreement to leave this use case, as presented.
	6. **Document 11-19/2058r0:**
		1. <https://mentor.ieee.org/802.11/dcn/19/11-19-2058-00-0rcm-despotic-govt-use-case.docx>
		2. This is a proposal for a new use case.
		3. Reviewed the use case.
		4. We probably need to soften the language.
		5. This use case, as written, probably has legal ramifications, similar to the one we discussed earlier (about rogue “containment”). A: It’s not clear that any such governments have a legal constraint issue. C: But, it could be other “authority” such a school, company, etc.
		6. Note that this is not necessarily about the government, per se, but could be other agents of the government.
		7. Q: Should we have a recommendation in the Table in section 4, for how to address this?
		8. Q: Should we split the document into use cases that are why randomized MAC addresses are useful, and then ones that have problems caused by them?
		9. C: This use case is completely valid, in terms of our scope for actions that can be done currently (surveillance) but would be broken by randomized MAC addresses. And, this then falls into the third row in the Table in section 4. It could be rewritten to be neutral of emotional or values terms.
		10. Author agreement to re-write, per the above.
		11. Could add a comment in section 4 that says that randomized (“Local ID”) MAC addresses enable some things, as well as impacting some things. We need to be careful that this is not a value statement of good or bad, just a factual statement that there are two results from randomized MAC addresses.
		12. Amelia and Dan will work on such text, off-line. Dan will work on re-writing the use case to be neutral.
	7. **Recommendations section of the report:**
		1. We have one already, to recommend that a broader privacy discussion should be continued, in some appropriate forum, perhaps a new TIG.
		2. C: Not sure a TIG is an appropriate group. Maybe a standing committee is better.
		3. C: Perhaps we should not recommend any particular group structure, just that a group be formed.
		4. C: We could just state, in a neutral way, that we noted we heard several presentations on such privacy topics that were out of our scope, without recommending any particular action, since we can’t task anybody with taking up such work.
		5. Reworded in this direction.
		6. As another recommendation, Chair suggests (in 11-19/1992r0 - <https://mentor.ieee.org/802.11/dcn/19/11-19-1992-00-0rcm-one-draft-recommendation.odt>) that we recommend the WG form a study group for a project to work on an alternative layer 2 identification mechanism that does not cause privacy concerns.
		7. C: I’m not convinced such a mechanism should be created by us. This is a problem for impacted uses to solve.
		8. C: We should help define a single mechanism for such use, rather than have those other uses invent numerous mechanisms.
		9. C: Not everything needs an 802.11 solution. Only network troubleshooting is a compelling use case for a layer 2 solution.
		10. Q: Did we cover all the concerns that the WBA liaison brought out, and ARC considered? We should double-check. A (Chair): Believe so, in use cases 3.6, 3.8 and 3.9. (for WBA liaison, see: <https://mentor.ieee.org/802.11/dcn/18/11-18-1579-01-0000-2018-09-liaison-from-wba-re-mac-randomization-impacts.docx> and <https://mentor.ieee.org/802.11/dcn/18/11-18-1988-02-0arc-proposed-response-to-liaison-from-wba-on-mac-address-randomization-impcats.docx>)
		11. C: Recommended practices for naming of SSIDs, and recommendations about correlation of information elements are probably both addressed only by 802.11 adding some recommended practices in an appropriate place (informative annex, etc.) That leaves only alternative layer 2 identification for purposes of troubleshooting.
		12. Q (Chair): So, are those our output recommendations? We need to work on wording to capture those.
		13. C: The client steering use case (3.1) is similar to the troubleshooting one – it is clearly in layer 2 scope to solve.
		14. Wordsmithed such items as listed above… Not clearly converging.
		15. Seems we have three potential directions: 1) a facility for use by 802.11 (such as steering); 2) such a facility that could perhaps also be used by third-parties for other purposes; 3) intentionally create an identifier that can be used only for third-parties and not for the direct use of the MAC/PHY.
		16. Generally, agreement on not #3, but not clear or unanimous, perhaps.
		17. C: On the other hand, we do things in 802.11 like very fine location, which is clearly not required for 802.11 to function, but is for a third-party’s use.
		18. Very quick poll on the above: Agreement on creating identifiers needed for 802.11 functionality. A few opposed to intentionally creating identifiers for third-party use, but more that were “not opposed” to such work.
		19. Will reflect more on this over the recess, and reconsider on Thurs AM1.
	8. **Recess, until Thursday AM1.**
3. **RCM TIG – F2F, Thursday 14 November 2019, 8:00 - 10:00**
	1. **Call to Order** at 8:00 by the TIG Chair, Amelia ANDERSDOTTER (ARTICLE19)
	2. **Call for secretary:**
		1. Mark Hamilton volunteered to act as secretary for this meeting.
	3. **Meeting etiquette reminder. Attendance reminder. Participation reminder. Resource URLs:**
		1. Slides 6 – 12 of agenda deck
	4. **Review Agenda** – 11-19/1741r4
		1. <https://mentor.ieee.org/802.11/dcn/19/11-19-1741-04-0rcm-rcm-tig-november-2019-f2f-agenda.odp>
		2. Agenda approved, as proposed.
	5. **Discussion on scope, and Mark Hamilton’s email to the reflector last night:**
		1. Appears that our scope is intended to be focused on “impacts on 802.11 features”, and that is a limited list.
		2. Our report could include lots of useful information, for things directly impacting 802.11 or not, just to be informative.
		3. Our report needs to recommend next steps for the 802.11 WG, however, and the extent of those next steps is likely only where there are 802.11 features that are impacted and future work on ways to mitigate those impacts.
	6. **Document 11-19/2058r1 (Dan HARKINS, HPE):**
		1. <https://mentor.ieee.org/802.11/dcn/19/11-19-2058-01-0rcm-despotic-govt-use-case.docx>
		2. This is a re-written proposed use case to remove the language about “who” and “why” and focus just on the “what” is happening in this use case.
		3. A proposed r2 of the document (worked on the screen) adds mention of this use case to the alternative identifiers potential mitigation technique.
		4. C: A bit of a concern about the last two sentences of the first paragraph of 3.12, and whether this is getting too far into the “why” again. A: But, other use cases present some context of why – for example the parental control system. Could soften/reword the language a bit, but not necessary to completely remove the “why” context.
		5. C: Could add some more positive “why” examples, to balance these sentences, perhaps.
		6. Dan will work off-line to update, with help from others with opinions.
	7. **Document 11-19/2078r0 (Mark HAMILTON, Ruckus/CommScope):**
		1. <https://mentor.ieee.org/802.11/dcn/19/11-19-2078-00-0rcm-rogue-detection-use-case.docx>
		2. Rewritten to focus on detecting rogue devices, rather than containing or stopping them.
		3. Q: Is this about difficulty of detecting a rogue AP? A: Not really, more about difficulty in tracking down the rogue AP, for example, once detected, if it keeps changing its address.
		4. No objection to accept this change.
	8. **Document 11-19/1992r1 (Amelia ANDERSDOTTER, Article 19):**
		1. <https://mentor.ieee.org/802.11/dcn/19/11-19-1992-01-0rcm-one-draft-recommendation.odt>
		2. This has some proposed options for our recommendation for future direction within WG11.
		3. Noted that there are features/aspects specified in 802.11 that are for the purpose of use by “third parties” – that is, 802.11 is not a self-contained document only for its own purposes.
		4. C: Support Option 3.
		5. C: Support Option 3, but suggest changing to focus on changes that serve the MAC and PHY interests, while the “beyond the MAC and PHY” are more a “nice-to-have”.
		6. C: Support Option 1. Don’t think we have identified further work that is needed. Would lean toward “do no harm”, since the majority of the use cases appear to be issues that are beyond the MAC and PHY.
		7. C: It’s not obvious from section 3 which things have been identified that are in this scope. Need to add discussion in the report to clarify this topic of “beyond MAC and PHY” for the reader.
		8. C: Suggest we straw poll the direction we want to go, and then spend time wordsmithing the recommendation to be clear and complete.
		9. Straw poll:
			1. Recommend no further work: 2
			2. Establish (only) a recommended practice: 1
			3. Technical work beyond a recommended practice: 7
			4. Don’t know/undecided: 1
		10. General consensus toward the technical work recommendation.
		11. Some items that need to be clarified:
			1. Connection between use cases and the idea of supporting the MAC and PHY, or serving interests beyond the MAC and PHY
			2. Chair suggestion of a phrase: “serve interests of users of IEEE 802.11 technologies (beyond the mere operation of MAC and PHY)”
			3. Do we need to poll the group, for how to handle the “beyond the MAC and PHY” work? Chair: We did that on Tuesday. What is being newly asked? A: On Tuesday we asked if there were objections to work beyond the MAC and PHY, today we crafting a recommendation to require such work, or optionally cover such work while requiring work on the MAC and PHY affects.
			4. Wordsmithed Option 3 to separate these.
			5. Do we need to state explicitly that this follow-on work must still maintain the privacy/anti-tracking/etc. concerns in whatever is developed? Agreed, and added a sentence.
			6. Clarified that the support of users of 802.11 is a “might also be facilitated” by the required work on MAC and PHY operation.
			7. The final point of the recommendation is to recommend forming a Study Group to do this work.
	9. **Returned to 11-19/2058r2:**
		1. <https://mentor.ieee.org/802.11/dcn/19/11-19-2058-02-0rcm-despotic-govt-use-case.docx>
		2. Reviewed updated language, which is trying to balance the purposes of such surveillance.
		3. Discussed adding this use case in 4.2, no objection. This new use case goes in the list in 4.4, also.
		4. No objection to incorporate the use case.
	10. Believe all the pieces are in place, and all have had a review. Work off-line on a final version of the report, to review this afternoon.
	11. **Recess, until Thursday PM1.**
4. **RCM TIG – F2F, Thursday 14 November 2019, 13:30 - 15:30**
	1. **Call to Order** at 13:30 by the TIG Chair, Amelia ANDERSDOTTER (ARTICLE19)
	2. **Call for secretary:**
		1. Mark Hamilton volunteered to act as secretary for this meeting.
	3. **Meeting etiquette reminder. Attendance reminder. Participation reminder. Resource URLs:**
		1. Slides 6 – 12 of agenda deck
	4. **Review Agenda** – 11-19/1741r7
		1. <https://mentor.ieee.org/802.11/dcn/19/11-19-1741-07-0rcm-rcm-tig-november-2019-f2f-agenda.pptx>
		2. Agenda approved, as proposed.
	5. **Only item left on agenda is to review and approve the latest draft of the output report, in 11-19/1442r7**
		1. <https://mentor.ieee.org/802.11/dcn/19/11-19-1442-07-0rcm-rcm-tig-draft-report-outline.odt>
		2. Reviewed the content, removed comments
		3. Made a few editorial corrections.
		4. Motion: Move to adopt the document in 11-19/1442r8 (<https://mentor.ieee.org/802.11/dcn/19/11-19-1442-08-0rcm-rcm-tig-draft-report-outline.odt>) and instruct TIG chair to forward to the working group.
			1. Moved: Dan Harkins
			2. Second: Antonio de la Oliva
			3. One member has an issue opening the document. Everyone else seems to be okay.
			4. C: The recommendation says to form a study group to investigate this further. But study groups write PAR and CSD, they don’t investigate things.
			5. Motion to amend: Change the reference to 11-19/1442r9 (<https://mentor.ieee.org/802.11/dcn/19/11-19-1442-09-0rcm-rcm-tig-draft-report-outline.odt>). The group edited r9 in section 5 to state that the study group will write a PAR and CSD to start a project on these topics.
			6. No objection to the amendment.
			7. Amended motion:
			8. Yes: 6 No: 0 Abstain: 3 Motion PASSES
	6. **Believing that the work of the TIG is now completed, the TIG recommends that it be disbanded. No objection.**
	7. **No further business**
	8. **Adjourned for the week.**

**References:**

1. <https://mentor.ieee.org/802.11/dcn/19/11-19-1741-02-0rcm-rcm-tig-november-2019-f2f-agenda.odp>
2. <https://mentor.ieee.org/802.11/dcn/19/11-19-0891-00-0rcm-atlanta-may-2019-minutes.docx>
3. <https://mentor.ieee.org/802.11/dcn/19/11-19-1357-00-0rcm-minutes-for-rcm-tig-july-2019-vienna.docx>
4. <https://mentor.ieee.org/802.11/dcn/19/11-19-1766-00-0rcm-minutes-for-rcm-tig-sept-2019-hanoi.docx>
5. <https://mentor.ieee.org/802.11/dcn/19/11-19-1768-01-0rcm-minutes-for-rcm-tig-oct-2019-teleconferences.docx>
6. <https://mentor.ieee.org/802.11/dcn/19/11-19-1442-04-0rcm-rcm-tig-draft-report-outline.odt>
7. <https://mentor.ieee.org/802.11/dcn/19/11-19-1989-00-0rcm-alternate-edits-to-rcm-tig-report.docx>
8. <https://mentor.ieee.org/802.11/dcn/19/11-19-1741-03-0rcm-rcm-tig-november-2019-f2f-agenda.odp>
9. <https://mentor.ieee.org/802.11/dcn/19/11-19-1442-05-0rcm-rcm-tig-draft-report-outline.odt>
10. <https://mentor.ieee.org/802.11/dcn/19/11-19-2058-00-0rcm-despotic-govt-use-case.docx>
11. <https://mentor.ieee.org/802.11/dcn/19/11-19-1992-00-0rcm-one-draft-recommendation.odt>
12. <https://mentor.ieee.org/802.11/dcn/18/11-18-1579-01-0000-2018-09-liaison-from-wba-re-mac-randomization-impacts.docx>
13. <https://mentor.ieee.org/802.11/dcn/18/11-18-1988-02-0arc-proposed-response-to-liaison-from-wba-on-mac-address-randomization-impcats.docx>
14. <https://mentor.ieee.org/802.11/dcn/19/11-19-1741-04-0rcm-rcm-tig-november-2019-f2f-agenda.odp>
15. <https://mentor.ieee.org/802.11/dcn/19/11-19-2058-01-0rcm-despotic-govt-use-case.docx>
16. <https://mentor.ieee.org/802.11/dcn/19/11-19-2078-00-0rcm-rogue-detection-use-case.docx>
17. <https://mentor.ieee.org/802.11/dcn/19/11-19-1992-01-0rcm-one-draft-recommendation.odt>
18. <https://mentor.ieee.org/802.11/dcn/19/11-19-2058-02-0rcm-despotic-govt-use-case.docx>
19. <https://mentor.ieee.org/802.11/dcn/19/11-19-1741-07-0rcm-rcm-tig-november-2019-f2f-agenda.pptx>
20. <https://mentor.ieee.org/802.11/dcn/19/11-19-1442-07-0rcm-rcm-tig-draft-report-outline.odt>
21. <https://mentor.ieee.org/802.11/dcn/19/11-19-1442-08-0rcm-rcm-tig-draft-report-outline.odt>
22. <https://mentor.ieee.org/802.11/dcn/19/11-19-1442-09-0rcm-rcm-tig-draft-report-outline.odt>