IEEE P802.11  
Wireless LANs

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| Minutes for RCM TIG - September 2019 - Hanoi | | | | |
| Date: 2019-09-19 | | | | |
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Abstract

Minutes for the RCM TIG meetings held during the September 2019 802 Wireless Interim Session

1. **RCM TIG – F2F, Tuesday 17 September 2019, 13:30- 15:30**
   1. **Call to Order** at 13:34 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 4 – 7 of agenda deck
   4. **Review Agenda** – 11-19/1420r2
      1. <https://mentor.ieee.org/802.11/dcn/19/11-19-1420-02-0rcm-rcm-tig-september-f2f-agenda.pptx>
      2. **Agenda items for the week**
         * + Summary of July meeting.
           + Discussion of draft report.
           + Randomized or Changing MAC address use cases (11-19/1607r0)
           + Randomized or Changing MAC address Recommendation (11-19/1653r0)
           + Draft outline (11-19/1442r0)
           + Teleconferences/future sessions
           + AOB
           + Adjourn.
      3. No objection to proposed agenda, as proposed.
   5. **Summary of July meeting** (agenda deck, slide 13)
      1. Background and agenda references. Reviewed 5 presentations.
      2. Agreed a work plan:
         1. August: Outline of the draft report (headlines)
         2. September : 3 meeting slots. Discussion on outline of draft report based on individual contributions for text chunks for the draft report (provided in good time before the meeting). Produce a first draft report.
         3. November: Conclusion. Goal: finalize report and give to CAC before wed/thur evening.
      3. So, this week we need to create the first draft report.
      4. Chair published a draft outline in August: <https://mentor.ieee.org/802.11/dcn/19/11-19-1442-00-0rcm-rcm-tig-draft-report-outline.docx>
      5. We’ll review presentations and try to fill this out, during the week.
   6. **Document 11-19/1607r0 –** Mark HAMILTON (CommScope/Ruckus):
      1. <https://mentor.ieee.org/802.11/dcn/19/11-19-1607-00-0rcm-randomized-or-changing-mac-address-use-cases.docx>
      2. This presents several proposed use cases and analysis on next steps needed.
      3. Q for the group: Is this a complete list?
      4. C: It's not clear how all of this will fit into the draft outline. Open for discussion. Idea is mostly to give some raw material into the group.
      5. C: For use-case #1 the infrastructure does not care about the identity of the phone.
      6. Q: Android uses 30 minute intervals as a default. is that a problem?
      7. A: For use-case #1 it is not a problem.
      8. Q: How many churches have Wi-Fi?
      9. A: Many. sure. Last week my company had a support call, that I heard about.
      10. Q: I struggle a bit with the meaning of rapidly randomized mac address. What is rapidly? What is randomized? This use-case should describe what the meaning of rapidly is.
      11. A: The idea is that each use-case needs to capture how rapidly is rapid. This might want to be in the first part of the document, some mention of how rapid is rapid in each of the use-cases. Random just means that there is no fixed identity.
      12. C: It could be good in the definition to clarify whether a randomized MAC address is kept over the same SSID.
      13. C: The MAC address could be changing with scope rather than with time, for instance.
      14. C: If you define what rapidly means per use-case, you get an idea of the frequency of change.
      15. Q: Should we issue these recommendations.
      16. A: We should capture the recommendation that 30 min is an ok time-interval for changing the MAC address. maybe also a mechanism to control that.
      17. C: Agreement that there needs to be recommendations FROM the IEEE 802.11 group. there are so many developers who do stuff and there are assumptions about timing.
      18. **For use-case #2:**
      19. Q: I have a router at my house. it is timed for different things - during dinner it shuts off, etc. is this use-case similar? So the access to the internet is shut off at the AP. in this use-case the AP assigns a MAC address to a device?
      20. A: These mechanisms WOULD work again if the client devices use the same MAC every time they are at the same SSID.
      21. Q: For me this is like, do you leave DHCP on? or do you assign IP addresses?
      22. Q: Maybe you want to mention specifically that you are using MAC addresses for access control? You could imagine different methods of doing access control.
      23. C: There is a use-case I forgot, for configuring which devices are on the network. people may not know what it's called, but they will be able to follow the instructions for how to implement parental control.
      24. C: Part of our legacy that we're dealing with is that the MAC address was meant to identify a particular physical device on a particular physical location, but now we are mobile and there are also logical devices - so there is no longer a fixed physical location and also not a fixed physical device.
      25. C: There are three things

1. mobility.

2. identifying the device.

3. modular mac address and logical partitions.

* + 1. C: Unique identifiers that map to either vendor, network provider, the device, or other types of differentiated identity for different contexts. We are struggling with having only one central identifier but we need to make them more context-dependent.
    2. C: There is a use-case with bandwidth capping. It can be configured through the AP and uses the information on MAC addresses.
    3. C: If you're at your house you might want the privacy of not being recognised by your MAC.
    4. A: It's rapidly changing if you need to reconfigure a parental control between one association and a different association.
    5. **Use-case #4**
    6. M: I have some other use-cases that I would like to map out.
    7. Mark: Remember we need to only identify problems, not to solve them, at this stage.
    8. **Use-case #5**
    9. C: The problem is not that the airport wants to identify the device. but that they need traffic flow statistics - if not changing very often.
    10. **Use-case #6**
    11. Q: We don't sell the idea of Wi-Fi tracking anymore, because the privacy implications are big and it's not really accurate. But there are a lot of cameras in the store.
    12. A: There is a zoo of privacy issues we could talk about but this is just about randomized MAC addresses.
    13. Q: But because people are using randomized MAC addresses this isn't really a use-case anymore.
    14. Q: A marketing use-case, marketing people have identified these use-cases where they get people to eye commercials and after they've done that for a period of time and people start recognising that and try to protect themselves. Privacy was not the consideration at the base of this, it was about getting this piece of information. and any form of identity can be abused in this case.
    15. A: There is not a problem of trying to identify or pushing marketing and so forth. It's just generically trying to figure out where people are.
    16. Q: The idea was to enable the user to make choices. It's about the user giving permission for these identities to be coupled together to enable features or use-cases. So we are trying to add functionality to the privacy that was added by randomized MAC addresses.
    17. A: So you have two separate use-cases here: where people go? and how they get there?
    18. C: The fact of the random MAC address is not the problem, but maybe the frequency - 30 minutes is ok.
    19. **Use-case #8**
    20. Q: Will this be extended to the use-case in the future where you have clients that have lots of radios, and how is this going to be handled. But what if you have a client with several radios of different MAC addresses?
    21. In the mitigations section, trying to make a table where use-cases are grouped for mitigations.
  1. **Document 11-19/1653r1 –** Lily HERVIEU (CableLabs):
     1. <https://mentor.ieee.org/802.11/dcn/19/11-19-1653-01-0rcm-randomized-or-changing-mac-address-recommendation.docx>
     2. This is for the recommendations section of the report:
        1. Against using MAC address as an identifier outside the scope of layer 2.
        2. Another use case: prevent home resident from using the home’s public hotspot
        3. (Parental control, etc.)
        4. Troubleshooting, analytics, helpdesks
        5. Lawful intercept
     3. This dovetails into the prior use case presentation
     4. The scope of “only layer 2” is a bit complicated. For example, a parental control system might block particular applications or content. Or, it might be used to control layer 2, such as traffic shaping or bandwidth limits.
     5. The TIG should consider generating liaisons to WBA, IETF, 802.1’s privacy group, etc. before we produce the report and close.
     6. The TIG might want to consider a tutorial slot at an upcoming meeting, where we can explain our report and ideas/concerns/concepts.
  2. **Recess, at 15:30.**

1. **RCM TIG – F2F, Tuesday 17 September 2019, 19:30 - 21:30**
   1. **Call to Order** at 19:34 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 4 – 7 of agenda deck
   4. **Review Agenda** – 11-19/1420r3
      1. <https://mentor.ieee.org/802.11/dcn/19/11-19-1420-03-0rcm-rcm-tig-september-f2f-agenda.pptx>
      2. Added RCM Rogue Containment Use case in 11-19/1665r0.
      3. Agenda approved, as modified.
   5. **Discuss outline for TIG’s report (11-19/1442):**
      1. Insert use cases in 11-19/1607r0 and 11-19/1653r9 into section 4, putting the possible mitigations into section 5.
      2. Add 11-19/1653r9’s recommendation into section 6.
      3. Discussed which of the use cases are within the scope of 802.11, and should be included in the recommendation for further work. For example, is the “Parental control” use case within scope? Perhaps we include all the use cases, so the Study Group can decide the project scope themselves.
      4. Noted the Android web site https://source.android.com/devices/tech/connect/wifi-mac-randomization, which has some interesting information about that particular OS’s current approach.
      5. The author of 11-19/1653 will expand those use case suggestions, to be considered for section 4, and perhaps section 5, and present that after this session.
      6. Plan is to have a rough draft of putting this text into the outline, to be discussed in the Thursday meeting. Chair agreed to try to produce this draft.
      7. Author of 11-19/1607 will consider comments from Tuesday PM1 meeting, for additional material for section 1, on the definitions of terminology.
      8. Reviewed a first proposal for a table to put into section 5, to help collect common mitigation strategies across the various use cases, and map the (hopefully smaller) list of mitigation strategies to the use cases.
   6. **Recess to work on the above, until Thursday AM1.**
2. **RCM TIG – F2F, Thursday 19 September 2019, 8:00 - 10:00**
   1. **Call to Order** at 8:01 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 4 – 7 of agenda deck
   4. **Review Agenda** – 11-19/1420r4
      1. <https://mentor.ieee.org/802.11/dcn/19/11-19-1420-04-0rcm-rcm-tig-september-f2f-agenda.pptx>
      2. Agenda approved, as proposed.
   5. **Discuss outline for TIG’s report (11-19/1442r1):**
      1. Amelia has updated the working draft report outline, to include the information presented earlier this week
      2. A preamble has been added to the use cases section, section 3. Rest is material pasted from the presentations from Tuesday’s meeting.
      3. Are use cases #2 and #3 different? The differences between these only appear when one starts to consider the details of the impacts – for example whether the device is associated to the network or not can alter the impacts.
      4. Clarify that a new layer 2 identifier as a mitigation technique implies a method for conveying this information needs to be done, also. Added that explicitly.
      5. Noted that other ways of “tracking” a device, by correlating/fingerprinting IEs, etc., could be used as a mitigation
      6. Do we have mitigations that could be mentioned for the “Pairing to a car” use case? It seems this is similar to the parental controls or “welcome home” use case(s). Added the “alternative identifier” mitigation as an “X”.
      7. In recommendations, including a suggestion to start a broader privacy investigation, beyond the specifics of Randomized/Changing MAC addresses (RCM) – probably a new TIG. (11-19/1679)
      8. Call for volunteers to write some text for section 5.1, with our primary recommendation for next steps on the RCM scope.
      9. Consideration of some proposed definitions for clause 2. Added examples for rapidly changing MAC address, to help clarify for readers.
      10. Will upload this latest draft as ‘r2’.
   6. **Consideration of sending liaison letter(s)**
      1. Considers sending liaison letter(s) to other groups that would be interested in this topic.
      2. Maybe do that if/when the WG starts the next level of activity in the RCM and/or privacy areas.
      3. Would be good to present our working draft/ideas to 802.1 in November, though, as they are considering starting a “MAC [SEC] privacy” project.
      4. Chair will coordinate.
   7. **Discussion of teleconferences and future sessions.** 
      1. Chair suggests 2 teleconferences, 1 hour each.
      2. Oct 15 and 29, noon ET, are suggested. Agreed.
      3. Will request 2 meetings in November session before mid-week plenary, and 1 after, plus an agenda item at the mid-week plenary.
   8. Suggestion that we may want to put a sense of urgency in our output report, and that this work is reactive to a situation that is already being deployed in the field, and the resulting problems that are/maybe occurring.
   9. **Adjourned for the week.**

**References:**

1. <https://mentor.ieee.org/802.11/dcn/19/11-19-1420-05-0rcm-rcm-tig-september-f2f-agenda.pptx>
2. <https://mentor.ieee.org/802.11/dcn/19/11-19-1357-00-0rcm-minutes-for-rcm-tig-july-2019-vienna.docx>
3. <https://mentor.ieee.org/802.11/dcn/19/11-19-1607-00-0rcm-randomized-or-changing-mac-address-use-cases.docx>
4. <https://mentor.ieee.org/802.11/dcn/19/11-19-1653-01-0rcm-randomized-or-changing-mac-address-recommendation.docx>
5. <https://mentor.ieee.org/802.11/dcn/19/11-19-1442-02-0rcm-rcm-tig-draft-report-outline.odt>